3 1761 06859658 4

PRINCIPLES OF KNOWLEDGE

philos
W232

THE PRINCIPLES OF KNOWLEDGE

WITH REMARKS ON THE NATURE
OF REALITY

BY
REV. JOHNSTON ESTEP WALTER
Author of "The Perception of Space and Matter"

VOLUME II

16198
24/8/03

JOHNSTON AND PENNEY
West Newton, Pa.

1904

Copyright, 1904, by
JOHNSTON ESTEP WALTER

TABLE OF CONTENTS.

SECOND VOLUME.

BOOK III.

COGNITION OF THE EXTRA-MENTAL OR EXTERNAL.

	PAGE
CHAPTER I.	
GENERAL REMARKS.	17

Recapitulation—All cognitive acts are pure modes of mind—Perceptions are also complex, constructed by the intellect—How, then, is knowledge of the extra-mental possible, how can the mind pass beyond itself in cognition?—The answer of dualism—Views of idealists and monists—Immediate and mediate knowledge—Monism and dualism in relation to the great theological and practical problems—The true, scientific method of dualism.

CHAPTER II.	
COGNITION OF MATTER.	33

As perceptions are pure modes of mind, knowledge of material realities is possible only through some conformity of perceptions to them—Locke's views of the conformity of perceptions to material qualities—He maintains two modes of conformity: conformity with resemblance, conformity without resemblance—Ideas of the primary qualities of matter conform to them with

resemblance; ideas of the secondary qualities conform to them, not as resemblances, but as "constant effects"—Locke's defective treatment of conformity—Berkeley's departure from him on this subject—Nature of matter—Matter possesses permanence, extension, and force—The doctrine that extension is not a primordial property of matter—Extension and unity—Our perceptions resemble material objects as to the primary qualities, especially the modes of extension—But since perceptions are modes of mind, and matter is outside of mind, how can this resemblance be known by us?—Locke's answer—The rise of the notion of spatial exteriority—The mind transcends its own bounds, in thought, by means of the notions of subjective extension, exteriority, and power—These notions become most vivid in the interactions and mutual compressions of our sensitive organs—From subjective interactions, in which the interacting members are extended, and from the comparison of cases in which sensations are consciously occasioned by self with cases in which they are not so occasioned, the mind springs to the inference of interaction between subject and extended object—Mind distinguishes itself both from the body and the not-body—Identity of mind and matter, as to the attribute of extension, the necessary condition of the cognition of matter—Theories of the perception of matter opposed to the above—Brown's theory—Mill's—Spencer's—Cognition of the secondary qualities of matter—The great difference, as to conformity, between the ideas of the primary and the ideas of the secondary qualities of matter. The former resemble, the latter only symbolize, external qualities—A primary problem as to the perception of matter is to discriminate those properties of the pure subjective percepts that are resemblances, from those that are only signs, symbols or constant non-resembling effects, of properties of matter—Phenomenal projection of sensations—Idealistic confusion as to the difference in conformity, as to projection, and the subjective and objective. Berkeley—The temporal order in the perception of the primary qualities of matter, of the secondary qualities, and projection—The perception of the primary qualities precedes and is the

condition of the perception of the secondary qualities and of projection — We know that some qualities of our perceptions symbolize some qualities of matter, because we already know that other qualities of our perceptions resemble other qualities of matter — Recapitulation — Perceptions, though they are subjective constructions, truly represent material realities — Idealistic error on this subject — Leadership and supremacy of the idea of extension in the composition and the body of perceptions — The notion of a large extension composed of original notions of small extensions — Synthesis and representation, by the visual sense, of the tactual and muscular experiences — Perceptive intellection constructs, but does not furnish new material or create; and its constructions or compositions truly represent external individuals — What do we really know of matter in perception? — Matter, as to its extension, spatial conformations, and motions, is entirely independent of thought. As to its apparent colors, sounds, etc., it is dependent on thought — Reconciliation of the scientific and popular notions of matter — Comparative activity and passivity of the mind in the perception of matter — Spencer's doctrine that perceptions are adjustments to, and products of, external objects and relations — *A posteriori* method in perception.

CHAPTER III.

COGNITION OF SPACE..... 100

Difference between space and extension — The objectivity and independence of space — Nature of space — Our knowledge of space is only of the finite and relative; but the knowledge is true — The notion of space acquired on the same subjective conditions as the notion of matter — The notion of space (empty space) gained through our notion of extended objects in space (filled spaces) — The muscular sense in the cognition of large space — The auditory and visual senses — The notion of space as perfectly continuous and illimitable — The bounds of perceived and imaginable portions of space themselves propel thought beyond them — The cognition of space implies the correct measurement of it — The notion of space a singular, not a general, notion.

CHAPTER IV.

COGNITION OF OBJECTIVE TIME..... 114

Time not an entity like space, but only a property of entities — The duration of changes and of transient and minor objects measured in the duration of great and permanent objects — Space and time related to each other as entity and property — This relation accounts wholly for the application to both of the same terms — Modes of time — Time a universal property. Is both subjective and objective — Objective time known only by means of subjective time — The thought and measurement of time that precedes and follows personal experience, and of great periods of time — The bounds of a duration, like those of a space, propel thought beyond themselves — The elementary materials of all time-knowledge are not themselves timeless, but temporal — Measurement of time — Time originally measured by subjective changes — Employment of objective measurers — Absolute measurement of time — The notion of time a singular, not a general notion — Cognition of number.

CHAPTER V.

COGNITION OF MOTION..... 130

The idea of motion involves three elementary ideas, those of space, time, and identity — Motion not a primary quality of matter coördinate with extension — Our primary knowledge of motion is of motion within the sphere of the mind and its sense-organs — Cognition of objective and the most extensive motions — Associate progression of the cognitions of extension, space, and motion.

CHAPTER VI.

COGNITION OF OBJECTIVE CAUSATION 134

Universality of the causal relation — Nature of our idea of it — The idea of power — Hume's view of this idea — He identified it with the idea of customary succession — His

error—The radical difference between the idea of succession and of power—How does the idea of power originate?—It does not originate from the perceptions of the contacts of external things; but yet is certainly present with such perceptions—It originates within the subjective experiences; it is involved in the consciousness especially of the relation between our volitions and the mental processes excited and controlled by our volitions—In subjective causation, cause and effect are both purely mental; and in their individuality and relation are immediately and certainly known—Into our notion of subjective causation enter clearly both the notion of pure succession (and simultaneity) and the notion of power—But the power of the mind is only ability to produce change—The notion of causation experiential in its origin, and not dependent upon any *a priori* principle or anticipation—Hume's argumentation against subjective causation—His error regarding the nature and extent of the power of the mind—Causation that is partly objective, having either the cause or the effect objective—Rise of the notion of an objective effect, and of an objective cause—The knowledge of each only mediate—Voluntary control of the movements of our physical organs—Causation that is wholly objective, having both cause and effect objective—Our notion of it manifestly includes the notion of pure succession and of power—Our cognition of objective causation based upon our cognition of subjective causation; but we come to our cognition of it through the mediation of causation partly subjective and partly objective—The power in subjective causation and the power in objective or physical causation not identical in nature; but they agree in the fact that both constitute efficient or productive antecedents.

CHAPTER VII.

COGNITION OF FINITE SPIRITS..... 158

Subjective idealism and the existence and notion of objective, independent spirits—Our knowledge of other human spirits is mediate and representative—It is subjective and complex—The subjectivity and complexity

of our notions of objective human individuals is consistent with true representation of them — Our knowledge is perception of two stages: first, the perception of the body; secondly, the perception of the soul through the perception of the body — Real similarity of nature is the condition of the ready and complete knowledge of man by man — Knowledge of the inferior creatures — The knowledge and certainty of our fellow men, as external and independent beings, an insuperable obstacle to current solipsism and idealism.

CHAPTER VIII.

COGNITION OF GOD..... 165

Different forms of argument to prove the existence of God and our knowledge of him — The Ontological argument. Anselm and Des Cartes — The argument from the moral nature of man, especially from the moral feelings — Error in supposing that the moral feelings lead to the knowledge of God — They rather are excited by and follow at least partial knowledge of God gained independently of them — Tendency of many to regard feeling, impulse or striving as the primary function of the soul, and intellection as secondary and ancillary — God's existence is a question for our intellectual power proper, and can never be settled otherwise, as by an appeal to mere feeling or instinct — The nature and process of the cognition of God — Relation of God's being to the human mind — Two extreme views regarding this relation: the one makes it a too close union; the other, a too wide severance — The truth between these extremes — The relation between the divine and the human nature must be so conceived as to preserve the individuality and responsibility of the human, without at the same time thoroughly separating it from the divine — As to both finite minds and the material world, we must hold to both the immanence and the transcendence of God — Our knowledge of God is relative or mediate and partial — As mediate, it is the same, in general, as our knowledge of any reality distinct from the mind — God, being known through our mind and external nature, is

one step farther removed from us, as respects knowledge, than they are—Evidences of the existence and character of God found in the mind of man and in the external world—But the main question for us is as to the possibility of truly knowing such evidences as may exist—Evidences in the human mind—Evidences in the external world—We interpret God's works by means of man's mind and works—By comparison of works, we discern both the points of resemblance and of difference between God and man—Man is merely a finite designer. God is the Creator and Supreme Designer—Can relative knowledge of God be true knowledge?—We have true knowledge of our own mind and of the external world, *i. e.*, we know them as they are in themselves; therefore we have true knowledge of the character of God manifested in them—Our knowledge of God partial—The doctrine that, because we can not know the infinity and perfection of God, we have no real knowledge of him, he is unknowable—Objections to theories like the above of the knowledge of God—*First*, That there is no real evidence of design in nature—The theory of development—If true, it does not exclude finality—*Second*, That evidences of design can prove at most only a designer, but not a creator, of nature—Kant and Mill—The separation of the designing and the creating of nature arbitrary, and contradicted by the constant deep penetration and perfect possession, by design and order, of the matter of the cosmos—The employment of contrivance and the existence of evil prove nothing clearly against the omnipotence of the Deity—There is no sufficient reason for going back in a regressus of causes beyond God considered as the personal designer and creator of the universe—*Third*, That our idea of God is anthropomorphic—All our knowledge is in fact anthropomorphic; and there is therefore no important special grounds for pronouncing against the validity of our idea of God—Our thought being true to the nature of our mind, to the external material world, and our fellow-men, is, as far as it goes, true to the character of God—Our thought, having its ground in the human being, is true to it; and, because of the uniformity in all being, is true also to objective being—

Though our thought of God is human thought, it is not necessarily unlike, but must rather be like, the thought of intelligent beings of a different rank — Man's worship of God is not "self-deification" — How does the finite mind ascend from itself to the Infinite? — Resemblance to the divine a condition of knowing the divine — *Fourth*, That the idea of God is not a constitutive part of our knowledge, but a regulative principle — Kant — This doctrine closely related to erratic anthropomorphism, and can be answered in the same way — Kant's distinction between reason and understanding groundless — The idea of God is the highest idea constructed by the understanding or intellect, and is true to the external object, as the lower ideas of the intellect are true to their external objects — If Kant's theory of nature or perception and of moral law were true, his theology would be true; but this theory being false, his theology is false.

BOOK IV.

THE EXTREMES OF KNOWLEDGE.

CHAPTER I.

PRELIMINARY REMARKS 231

The division of knowledge into the lower and higher, the near and extreme, portions and qualities — Of the latter are infinity, necessity, universality, certainty — The great prominence given to these in philosophical discussion — The division of the sources of knowledge corresponding to this division of knowledge.

CHAPTER II.

THE NATURE OF EXPERIENCE 234

Common indefiniteness as to Experience — The term *experience* — Definitions of experience — Ambiguity of the term *sense* — Confusion as to the relation of the experiential and *a priori* elements of knowledge — The mate-

TABLE OF CONTENTS.

II

PAGE

rials and comprehension of experiential knowledge — Its presuppositions — It presupposes the existence of the mind and its faculties — It presupposes certain inherent, innate mental laws — Chief experiential cognitions — (a) Cognition of mental substance — (b) Of extension and space — (c) Of duration — (d) Of causation — (e) Of matter.

CHAPTER III.

THE NOTION OF INFINITY..... 252

Infinity not an entity, but a quality — It is properly that to which we can think no limits — Locke on the origin of the idea of infinity — Our notions of infinity are of things homogeneous — These notions founded on our knowledge of finite portions of the same things — The inclination and movement of thought beyond the finite occasioned by the bounds of the finite — Our notion of the infinite, as of infinite space, both positive and negative — Notion of the infinity of time — Notion of the infinity of the Creator — No *a priori* subjective principle, belief or necessity required to account for the notion of infinity — Our notion of infinite space, for example, is wholly accounted for by the periphery of finite or comprehensible space — The occasion and the only necessity to think of infinite space is in this objective periphery, or in the experiential subjective idea of it.

CHAPTER IV

NOTIONS OF PERFECTION..... 261

The power of the mind, in different fields of thought, to form notions more perfect than are gained in real experiences — What is the character of this power and process? — Geometric quantities, the line and surface — The thought of the geometric line, and straight line, is reached, from lines really perceived, by abstraction, negation, and approximation — The thought of the geometric straight line is the arrival at the limit of a gradation, as to thickness and crookedness, clearly seen and followed

in real experience — The tendency to go to this limit is the end of a tendency acquired by the mind in the clear and frequent perception of that gradation, and of the practical advantages of going as near to the limit as possible — The geometric surface — Moral ideals — The idea of God — Aesthetic ideals — All the highest works of the imagination can be accounted for, as to their perfection, on the grounds of the materials and tendencies this faculty gains from real experiences — Ruskin on the imagination.

CHAPTER V.

THE NECESSITY AND UNIVERSALITY OF KNOWLEDGE. 272

Different species of necessity and universality — Necessity and universality considered with reference (1) to the fundamental laws of thought, the Principles of Identity and Contradiction — These qualities exist, but depend upon the self-assertion and simplicity of these principles regarded as purely experiential — Necessity and universality considered with reference (2) to Space and Mathematical Axioms — That we can not think space away, or think a termination to it or of a void within it, is unquestionable; but no *a priori* principle of necessity is required to account for this — This necessity is only a quality of our experiential thought of space — The Associationalist theory of this necessity. J. S. Mill — Geometric axioms — The Intuitionist theory of their necessity. Mansel — The Associationalist theory — The necessity in our thought of these axioms comes from no *a priori* subjective principle, but from the simplicity and perfect cognizability of the elements or quantities concerned in the axioms — There is no like necessity in our thought of most other things, because of their complexity, or the multiplicity of their parts or qualities — The axiom that two straight lines can not inclose a space, is analytic and not synthetic — The universality of geometric axioms accounted for in the same way as their necessity — Necessity and universality considered with reference (3) to Time and Causation — The theory of Evolution and the necessity and universality of thought.

CHAPTER VI.

THE CERTAINTY AND CRITERION OF KNOWLEDGE. . . . 307

The two opposite tendencies, the one to include many cognitions within, the other to exclude many from, the sphere of certainty—Certainty a mode or affection of mind, or subjective—There is a difference of kind and of rank between the certainty of immediate knowledge and that of mediate—The nature of Truth—Division of truth into formal and real—The nature of Belief—Does belief involve, or is it involved in, Will?—Comparison of belief and necessity—(1) Certainty of Immediate Knowledge—It is of the highest rank, it is perfect; because of the closeness of the relation, or the identity, between the knowing and the thing known—Self-evidence and necessity as criteria—The criterion or standard of immediate knowledge is, in a word, Immediacy—(2) Certainty of Mediate Knowledge—Is different in kind and inferior in rank to the certainty of immediate knowledge; because of the duality and less intimacy of relation between knowledge and object—The criterion as to rank of certainty is here also Immediacy—Difference as to certainty within the sphere of mediate knowledge; between memory and perception; and between perceptions—Certainty of external realities, matter and space—Force of belief as a criterion—Force of belief is genuine certainty, especially when supported by our knowledge of the possibility in our perceptive faculties of forming true representations of the supposed external realities—Reid—Necessity as a criterion—Spencer and the “universal postulate”—Knowledge of the external not necessary and not of the most perfect certainty; but is yet real and of a high grade of certainty—There is an internal relation between force of belief as to external realities, and our faculty of forming true representations of such realities—If we have real knowledge and certainty of the existence of external things, our percepts must be true images, to a degree, of their real character—Certainty of Expectations.

BOOK III.

COGNITION OF THE EXTRA-MENTAL
OR EXTERNAL.

COGNITION OF THE EXTRA-MENTAL OR EXTERNAL.

CHAPTER I.

GENERAL REMARKS.

In our course thus far in the discussion of the principles of knowledge, attention has been confined for the most part to the subjective world, or the internal world of the Ego. The existence of a knowable objective world of matter, spirits, and space, independent of and detached from the Ego, has been assumed; but it has only been mentioned to exclude it from present and to reserve it for future and distinct discussion. As to the subjective world, we have considered, in the first place, its simple and original phenomena, our knowledge of them as present and as past, and their simplest relations to one another, or their relations so far as these are implied and required in our first cognitions and the individualization of phenomena; in the second place, the relation of phenomena to real mind, and the knowledge of real mind which we have in phenomena; in the third place, the various processes and stages of intellection, or the special synthesis of the individual phenomena of mind by which these phenomena are combined in percepts, images, and concepts. The whole sphere of our discussion has been therefore

within the mental; in brief, including the knowledge and nature of the mind and its modes, and the syntheses into which the latter are constructed. This sphere may be denominated the sphere of consciousness or immediate knowledge. The discussion of the mind and its simple and complex phenomena thus apart from the objective world, is possible and proper because of their existential or thorough severance.

The references which have been already made to the existence of the external world, and especially to the mode of cognizing it, were necessitated by the attempts of many of the most distinguished psychologists, even in the latest times, to introduce into the sphere of mind and consciousness what really belongs to the external world, what is outside of consciousness and never comes within it. To draw the line between the subjective and the objective, between the sphere of consciousness and the sphere of the external, is an old and fundamental problem of philosophy; but unfortunately, to the present time, no exact result has been reached which appears to command very extended unanimity. This fact might seem to be a serious puzzle for Dualism. It would be so, if it were not that the long time and struggle of the human mind in making advancement in science are notorious and indisputable.

As a conspicuous instance of the confounding of the subjective and objective, I have referred to the effort of some eminent realists to maintain that the qualities of matter are constitutive elements of the perceptive states. They in fact make these states composites of mental and corporeal qualities, and regard both classes of qualities as existing within

consciousness with like reality and certainty. The doctrine absolutely lacks warranty, is a misrepresentation of the facts of the mind.

It is a fundamental principle of knowledge that all the cognitive acts, simple and complex, including sensations, are pure modes of mind. This principle, it is true, is one which the idealists never weary of repeating and enforcing against dualists. It must be admitted, however, that, in this instance, they have seized a primary principle of the science of knowledge, though they greatly err as to its incompatibility with dualism; and on the basis of this principle our discussion has thus far proceeded. Further, whatever things may exist, they are yet not known, or have no existence for the mind, unless they are known through its cognitive modes. The mind has no hold upon anything independently of these modes. Therefore, though Being, especially external Being, and thought are not identical, yet things would be as if they were not, without the mind's thought; though the non-ego does not exist through the ego, it must be known through it. But as to the constitution of the cognitive modes, they are pure from all qualities of matter. They are modes of mind; they are in no degree modes of matter. They are existentially associated with mind, and existentially detached from matter or its properties. Moreover, the pure mental modes are alone phenomena strictly so-called. The term *phenomenon* is often used in a very wide sense, to denote any quality or event; but in the strict meaning of appearances, the modes of the mind only are phenomena, for they only really appear to the mind. The mind and its pure modes, consequently, form a

distinct sphere of being and knowledge — the subjective sphere properly so called, the sphere of consciousness or immediate knowledge. The cognitive acts are the properties of the mind, and are not the properties of anything else; and, owing to their peculiar relations to one another and to real mind, themselves, their relations, and real mind must be known in a manner in which nothing truly objective is known, *i. e.*, immediately; they are known without being necessarily known in relation to anything objective, or without anything objective being necessarily known in the same way as they are. It is another important principle of perception, that the perceptive states are complex, or are “actively constructed” by the intellect. Into these states are combined, as was before considered, sensations and others of the elementary materials of knowledge. The composition of perceptions is, in short, one of the grand functions of the intellect.

The great question then arises, if these principles be true, how is any knowledge of the external world of matter, minds or spirits, and space possible? how can we go beyond ourselves, or beyond the sphere of our mind, in knowledge? I answer, in general, it is possible on the fact that the cognitive modes, though pure subjective and subjectively constructed modes, may and do represent external realities. All along our discussion hitherto the existence of an extra-mental world has been tacitly accepted; and it is here fully and explicitly confessed that this has been done on the assumption that the fundamental, indeed the only, proof of its existence is the establishment of such representation. To show how modes of mind may

represent objective realities, and may be known to represent them, is the foundation problem of dualism.

Idealists and monists, on their part, endeavor to maintain that the cognitive acts, being modes of mind, can not represent, or at least can not be known to represent, objective realities, realities separate from and independent of our intelligence; and that, consequently, there is and can be no proof of any such realities, that it is impossible even to think of or discuss their existence. All so-called objective realities are, they hold, pure complex modes of mind. For example, Professor Bain says: "Inasmuch as knowledge and perception are purely mental, it has been asked whether there be anything else than mind and its activities in the universe; or what reason have we for believing in the existence of counterpart objects, apart from and independent of our sensations. May not waking thought be itself a dream? On this question, more generally interesting than perhaps any other in our subject, the following remarks are submitted: (1) 'There is no possible knowledge of a world except in reference to our minds. Knowledge means a state of mind; the notion of material things is a mental fact. We are incapable even of discussing the existence of an independent material world; the very act is a contradiction. We can speak only of a world presented to our own minds. By an illusion of language, we fancy that we are capable of contemplating a world that does not enter into our own mental existence; but the attempt belies itself, for this contemplation is an effort of mind.'" ¹ Again:

(1) *Senses and Intellect*, p. 375.

"We are affirming that to have an existence out of consciousness which we can not know but as in consciousness. In words, we assert independent existence, while in the very act of doing so, we contradict ourselves. Even a possible world implies a possible mind to perceive it, just as much as an actual world implies an actual mind. The mistake of the common modes of expression in this matter is the mistake of supposing the abstractions of the mind to have a separate and independent existence."¹

In this first pointed extract there is express reference to independent matter only, and not to independent minds or spirits; but if the reasoning from

(1) *Sense and Intellect*, p. 381. The teaching of these passages is zealously advocated at present by not a few. I add a specimen of many statements of the same main philosopheme made by a somewhat different school: "To go beyond, or attempt to conceive of an existence which is prior to and outside of thought, 'a thing in itself,' of which thought is only the mirror, is self-contradictory, inasmuch as that very thing in itself is only conceivable by, exists only for, thought. We must think it before we can ascribe to it even an existence outside of thought." (Caird's *Philosophy of Religion*, p. 156.) These extracts, however, are little more than the repetition of the plain teaching of Berkeley and Kant, as appears, for example, from the two passages following: "I ask whether those supposed originals or external things, of which our ideas are the pictures or representations, be themselves perceivable or no? If they are, then they are ideas, and we have gained our point; but if you say they are not, I appeal to any one whether it be sense to assert a colour is like something which is invisible," etc. (*Principles*, sect. viii.) "We have sufficiently proved in the transcendental aesthetic that everything perceived in space or time, consequently all objects of a possible experience, are nothing but phenomena, that is, mere presentations, which, as they are represented, as extended things or series of changes, have no independent existence outside of our thought." (*Kritik d. r. V.*, Hartenstein, 1867, p. 346.)

the pure subjectivity of the states of knowledge to the incapability of "discussing the existence of an independent material world" be cogent, it would seem to be equally cogent to the like incapability regarding independent spirits of every rank, and to close all being, material and spiritual, within the sphere of the Ego. If this be not the conclusion of the author, he would then seem to follow Berkeley into a gross inconsistency of his philosophy, in which the existence of "unperceived" matter, or of matter independent of and distinct from our "ideas," is denied, but the existence of spirits independent of and distinct from our "notions" is affirmed. What proves that the *esse* of material things is *percipi*, ought to prove that the *esse* of other minds is *percipi*. But leaving this aside, I can not grant that the reasoning of this writer is conclusive. We may unreservedly allow the truth of the principle on which he proceeds—namely, the pure mental character of the knowing states; but the conclusion to the inability to discuss or think of extra-mental existences is without sufficient warrant; it is a gratuitous, a too ready and hasty, contraction of the range of being and knowledge.

In direct opposition to this conclusion, it might be said that we certainly do discuss the existence of external and independent realities; that it is done continually and by all men; that there can be hardly anything more evident. There is truth here, which the monists can ignore, but can not refute; but yet we meet with a decided check in regard to it. For every dualist who is alive to the real nature and difficulties of the problem of perceiving the external will admit that the mind has power to objectivize its pure

affections, as, for example, colors, and that we are strongly inclined to take for objective what is entirely subjective.

Notwithstanding the manifest tendency to objectivize the pure subjective states, we have still good and sufficient grounds for rejecting the idealistic conclusion. It admits of being shown that the perceptive states may represent extra-mental objects, and may be known to represent them. It is possible to draw the line distinctly between the mental and the extra-mental, or between the really subjective and the really objective. The objectivization of the perceptive states can be clearly accounted for on the dualistic view. It is intelligible that subjective synthetic states may truly represent external individuals. The consideration of this representation, of this discrimination, of this going beyond the modes of the mind by means of the modes themselves, constitutes the present advance in our discussion. We have dwelt on the perceptive phenomena in their peculiar relation to the mind, in their composition, in their relations to one another; we proceed in this Book to consider them as facing outwards, in their reference to external and independent things,—not simply as immediate subject-objects, but as media of the knowledge of object-objects, or objects properly so called.

It must here be admitted, in regard to the term *knowledge*, that in calling the apprehension of external objects knowledge, we give to this term an extension of meaning, beyond what it has when applied to subject-objects, which embodies all the significance of dualism. It is important to recognize distinctly

these diverse, or the closer and wider, meanings of the word, in order to make the use of it easy and clear. We have already marked them by the adjectives *immediate* and *mediate*. The expressions *immediate knowledge* and *mediate knowledge* will serve, in general, well; but they still hardly indicate explicitly and fully enough the great difference meant by them. In the cognition of a mental state, the knowing and the thing known are identical. Consciousness of the state is inseparable from it. Here, as some would say, subject and object are one. The Knowledge is strictly *immediate*. In the cognition of real mind, the knowing is a mode of the thing known. The two are not absolutely identical, but they are inseparable. There is no mediation, no inference from one to the other. Mind is not known apart from its modes, since it does not exist apart from them. Thought and mind being together in existence, are together in *immediate* knowledge. But in the cognition of external things, there is only the representation of them by the modes of the mind. There is no actual apprehension of any elements of the things. No element of them comes into consciousness. The representative modes, the media of cognition, are in consciousness, but the things are absolutely outside and severed from it. This is the character, in general, of the knowledge of things beyond the mind. We call it *mediate* knowledge. Its thoroughgoing unlikeness to immediate knowledge is plain. We should observe further, that the same act of knowledge may be a knowing both of the mind and of the extra-mental. The knowledge of mind is presentative, and

that of the extra-mental representative. 'The presentation is both a presentation and a representation.'

The knowledge of past mental states is also called mediate knowledge. I have already remarked briefly on the difference between these two species of mediate knowledge, the external and the internal. It is a difference which is often disregarded; but no penetrating treatment of knowledge can disregard it. In the case of past mental states, the knowing and the thing known are modes of the same entity, the knower. In the case of external things, the knowing and the thing known are existentially severed. The former is mediate knowledge without inference; the latter is mediate knowledge with inference. This difference of mediacy implies differences of directness and certainty. There are also differences within our mediate knowledge of external things. Things differ in their remoteness or spatial distance from the mind. They differ, again, where there is no diversity in spatial distance, in the directness with which they

(1) In accordance with this last observation it may also be truly said, that our knowledge of the external world is a "progressive revelation to the self of its [the self's] own nature"; or, that "every conceivable advance in knowledge is a realization of ourselves." The growing knowledge of the objective is a growing knowledge of the subjective. The mind, because of its inherent potentialities as to materials and synthesis, progressively affords, upon excitation, representative modes of an infinity of external objects and motions and their unions. It is the great error of the idealists to deny that, beside the internal procession and system of knowledge, the internal percepts and images, or subject-objects, there exists another kind of objects, namely, extended, permanent and moving realities, outside the mind, quite independent of our intelligence, and known representatively through the internal.

affect the mind. One external thing, as a spirit or an imponderable agent, may be known only through another external thing or things, by the effects it produces on them, and not by the effects it produces immediately on the mind. We may say then, without reference to space only, that mediate knowledge of the external differs in degrees or steps. Knowledge of an external object, by its direct action on the mind, is mediate knowledge of one step. Knowledge of an external object, through another external object, is mediate knowledge of two steps. Very few things are known by their direct impression. Most are known by the propagation of their action or power through one or more media.

It should be remarked further of idealists, that they not only endeavor to maintain that the existence of a sphere of being external to and independent of the mind is unprovable and scientifically untenable; but they also contend sometimes, especially in regard to matter, that it is a point of great practical advantage to get rid of the matter of common opinion,—of matter considered as something apart from intelligence and independent of the mind.¹ Again, not

(1) "In regard to all the great spiritual interests, as the existence of God, the freedom of the will, and the immortality of the soul, it is of immense consequence to get quit of matter (of course as ordinarily understood), and with it of materialism. We may say, indeed, that in the present disintegration of religion around us, the idealism of Berkeley, of Carlyle, and of Emerson, has been to many a man the focus of a creed, of a fervent and sincere and influential faith." (Stirling's *Schlegel's Hist. Philosophy*, p. 420.) Both Berkeley and Kant believed that the main problems of theology and ethics would be greatly lightened by the extinction of matter viewed as having existence, extension and duration, independent of thought.

infrequently idealists treat every form of real dualism with unfeigned contempt. To what they deem scientific refutation, they yet add scorn and derision. Such dualistic views as have just been set forth, are denounced by many, particularly by those who are imbued with the Kantian and Hegelian idealism, as, in their judgment, "uncritical thinking," "mechanistic dualism," "grober Realismus," "dogmatism." The general cause of offense is, that dualism, according to their conception, breaks the unity of being or creation, and makes a science of knowledge or a complete intellectual system impossible.

Pure immaterialism or idealism, as opposed to the partial materialism of genuine dualistic realism, can rightfully claim no advantage over the latter in the solution of the great theological and moral problems. Berkeleianism has never operated extensively as an antidote to atheism, though so to operate was its grand moral purpose. Immaterialism, if it include, and it generally does include, the denial of the cognition of real extension as an original and primary knowledge and element of intellection, condenses all being into a mathematical point, and ends in pantheistic idealism or pantheism; and if pantheism ever answer any of the theological and practical difficulties of dualism, it does it only by raising others that are more oppressive and dreary. The materialism of dualism, *i. e.*, the doctrine that matter is external to and independent of the human mind, undoubtedly somewhat complicates theological and moral questions; but it is a degree of complication which arises from the actual facts, the actual dualism of being; and a satisfactory and final answer to these

questions, as, *e. g.*, the question of the Divine Government, can be reached only on the ground of all the facts, on the ground of dualism. Immaterialism and monism seek to simplify spiritual problems by simplifying, by concentrating or unifying being, by putting matter within mind. This is not to answer, but to evade, the difficulties of these problems; because it answers by changing the fundamental conditions of answering; it answers by contracting and ignoring the real extension and multiplicity of the things to be considered. The attempt to get quit of matter by subjectivizing it has always failed, and appears destined always to fail. Matter persistently asserts its independency; and in the consideration of theological and practical questions its self-assertion can not be disregarded, but must be heeded. It may be brought as a just charge against Kant, that he too far set the example of escaping the difficulties of great practical spiritual problems by changing the real conditions of these problems; and his immense influence as a leader in philosophy has, in this respect, been fraught with evil.

The censure and derision by monists of dualism, as introducing a mechanical and gross division within being, and as complicating the great questions of life, are probably more emphatic in the present generation than they have ever been before. The assurance of monists will admit of no doubt or question. "The system of Locke," say they, "cuts nature in two." "The isolated reality and exclusiveness of physical nature and mind is a figment." They deem any real difference within the sphere of substance or being, the existence of one part or one kind of being inde-

pendent of another, as impossible, as breaking the unity that *must* belong to creation, without which creation would be a poorly jointed system, or such a system as no God could or should make.

Dualism, however, while directly opposed to the closed unity of monism, must still by no means be understood as denying important unity to being taken in its whole compass. It allows that matter and mind, though numerically and substantially distinct, are parts of the same general system, and have important relations as such; that both are projections from the hand of the one Creator, and are supported by his power. But it at the same time regards the question of the relation of God, as creator and conserver, to these different productions from his hand,—the peculiarity of his relation to matter, to its forces and motions, the peculiarity of his relation to mind, to its thinking and freedom,—as apparently absolutely beyond solution by the human mind. Dualism, furthermore, is positive in demanding that the answers to the great moral questions shall be adapted to the constituents and facts of being, and not the constituents and facts of being to the answers.

In conclusion, it should be remarked that the method of dualistic realism is a subject of almost as much interest as the fact of realism itself and the representative character of our knowledge of external reals. The matter of method referred to here is the question between the *a priori* and *a posteriori* theories of cognizing external things. We must deprecate the manner in which apriorists have depreciated and contemned the real merits of the Lockian *a pos-*

teriori dualistic realism. The almost universal custom among realists of resting the proof of realism upon the *a priori* method, is open to the gravest objections. To base the knowledge of the extra-mental upon some extraordinary faculty, as "intuition," etc., or some extraordinary cognitive principle, symbolism, or necessity, is the application of a method to realism which certainly requires, to say the least, the most careful reconsideration. There is some force, it must be admitted, in the remark, that "such dogmatic axioms, which make too comfortable pillows, will always lead back to skepticism and critical doctrines which they can not refute."

Notwithstanding the fact that in later times the great majority of devoted and conspicuous advocates of realistic dualism have been apriorists, and notwithstanding their great confidence in their method, and their great depreciation of the *a posteriori*, it is to-day open to question whether dualism may not have its best defense in the *a posteriori* method and in the entire exclusion of the *a priori*; whether the clearest, most satisfactory, most stable proof may not be furnished from the simple constitutive qualities of real mind and its ordinary faculties, to the disregard of all so-called innate forms, active principles of necessary immediate intuition, etc., of the external.

In now passing to the special consideration of the cognition of external realities, we are following the line of the mind's own original progression; which begins with the mind itself and its modes, and proceeds outwards. But the act of the mind in going beyond itself in knowledge, is a far more remark-

able step than any of those steps it takes from its original states, as already noted, by imagination, conception, inference; all these being within the subjective sphere, and consisting mostly in comparing, abstracting from, compounding, and condensing the internal experiences.

CHAPTER II.

COGNITION OF MATTER.

It has been maintained above that mind and matter are distinct and independent entities, like any two external objects in the common view; as, for example, two apples, two stones, or two men. It has been further maintained that all cognitions, in themselves, are pure attributes or modes of mind, having the indissoluble union of coexistence with the mind; and that, consequently, being in such close relation to the mind, they have as remote relation to external objects as the mind itself has, or as one object has to another. Regarding these as fundamental principles, we have now to consider how, over this gulf between mind or the percipient mode and the external material object, knowledge of the latter is possible.

The only means of this knowledge conceivable, apart from direct Divine agency, is some conformity which the mental percipient mode may have to the external object. This view is in harmony with the doctrine of Locke as set forth in the following well-known passage: "It is evident the mind knows not things immediately, but only by the intervention of the ideas it has of them. Our knowledge, therefore, is real only so far as there is a conformity between our ideas and the reality of things."¹

(1) *Essay*, IV., iv. 3.

The views of Locke regarding the conformity between our ideas and the qualities of material things are worthy of careful consideration. He marks two modes of conformity, one of which pertains to our ideas of the primary qualities, the other to our ideas of the secondary qualities. The distinction of the primary and secondary qualities of matter is clearly considered and emphasized by Locke, and is an important feature of his doctrine of conformity. As primary qualities he enumerates "solidity, extension, figure, motion or rest, and number";¹ but his lists of these qualities are not entirely uniform. The secondary qualities are "colours, sounds, tastes, smells," etc. Though Locke obscures his treatment of this distinction by using the same term to denote both the objective material qualities and our ideas of them, it is still plain that he attributes the two classes of qualities to matter. Defining the primary qualities of body, he says they are "such as in all the alterations and changes it suffers, all the force that can be used upon it, it constantly keeps; and such as sense constantly finds in every particle of matter which has bulk enough to be perceived and the mind finds inseparable from every particle of matter, though less than to make itself singly perceived by our senses." The secondary qualities are "nothing in the objects themselves but powers to produce various sensations in us by their primary qualities, *i. e.*, by the bulk, figure, texture, and motion of their insensible parts, as colours, sounds, tastes, etc.; these I call secondary qualities."² The secondary qualities of body are fre-

(1) *Essay*, II., viii. 9.

(2) *Ib.*, II., viii. 10.

quently thus declared to be "powers"; which powers "depend" upon the primary qualities of body, are the "operations" and "motions" of the "insensible particles of matter."¹ The secondary qualities of body are, accordingly, but qualities of the primary qualities.

Our ideas of the primary and our ideas of the secondary qualities of body are the two chief classes of Locke's "simple ideas" of sensation. Now the grand difference between these two classes of simple ideas is, as marked by Locke, the difference in their conformity to the corresponding classes of objective qualities, the primary and the secondary. Here appear the two modes of conformity "between our ideas and the reality of things" just referred to above. The one is "resemblance"; the other is mere "answering." The ideas of the primary qualities resemble these qualities. The ideas of the secondary qualities "answer," but do not resemble, the secondary qualities. "The ideas," says Locke, "of primary qualities of bodies are resemblances of them, and their patterns do really exist in the bodies themselves; but the ideas produced in us by these secondary qualities have no resemblance of them at all. There is nothing like our ideas existing in the bodies themselves."² Here resemblance is distinctly affirmed of the ideas of the primary qualities, and denied of the ideas of the secondary. But while denying to the ideas of the secondary qualities more resemblance to the objective qualities than a word has to an idea, or a pain to the "motion of a piece

(1) *Essay*, II., viii. 13.

(2) *Ib.*, II., viii. 15.

of steel dividing our flesh.”¹ he clearly ascribes to these ideas, in the following passages, the other kind of conformity, viz., mere answering or correspondence: “ Thus the idea of whiteness or bitterness, as it is in the mind, exactly answering that power which is in any body to produce it there, has all the real conformity it can or ought to have, with things without us. And this conformity between our simple ideas and the existence of things is sufficient for real knowledge.” “ Our simple ideas are all real, all agree to the reality of things: not that they are all of them the images or representations of what does exist; the contrary whereof, in all but the primary qualities of bodies, hath been already shown. But, though whiteness and coldness are no more in snow than pain is; yet those ideas of whiteness and coldness, pain, etc., being in us the effects of powers in things without us, ordained by our Maker to produce in us such sensations; they are real ideas in us, whereby we distinguish the qualities that are really in things themselves. For these several appearances being designed to be the mark whereby we are to know and distinguish things which we have to do with, our ideas do as well serve us to that purpose, and are as real distinguishing characters, whether they be only constant effects, or else exact resemblances of something in the things themselves; the reality lying in that steady correspondence they have with the distinct constitutions of real beings. But whether they answer to those constitutions, as to causes or patterns, it matters not; it suffices that

(1) *Essay*, II., viii. 13.

they are constantly produced by them." ¹ The "conformity," "answering," or "correspondence" of our ideas of the secondary qualities with respect to the objective qualities is, in short, that they are "constant effects" of these qualities, but have not the remotest likeness to them. In a comparative view the two classes of objective qualities and our ideas of them stand, as to conformity, thus: In relation to our ideas, the primary qualities are "patterns," but the secondary qualities are "causes"; or more definitely, the primary qualities are both causes and patterns, but the secondary are only causes and not patterns. In relation to the qualities, our ideas of the primary qualities are "images," "representations," "resemblances"; but our ideas of the secondary qualities only answer or correspond to them as "constant effects," having "no resemblance of them at all."

Cognition by these two kinds of conformity of our internal ideas to external qualities, Locke distinguishes as "real" knowledge. It is interesting at this point to compare briefly the chief diverse definitions he gives of knowledge. "Since the mind," he says, "in all its thoughts and reasonings hath no other immediate object but its own ideas, which it alone does or can contemplate, it is evident that our knowledge is only conversant about them. Knowledge, then, seems to me to be nothing but the perception of the connexion and agreement, or disagreement and repugnancy of any of our ideas," ²

(1) *Essay*, II., xxx. 2. See viii. 11, 12, and IV., iii. 28.

(2) *Ib.*, IV., i. 1, 2.

Again: "It is evident the mind knows not things immediately, but only by the intervention of the ideas it has of them. Our knowledge, therefore, is real only so far as there is a conformity between our ideas and the reality of things." These two definitions are combined in the following: "Whenever we perceive the agreement or disagreement of any of our ideas, there is certain knowledge; and whenever we are sure those ideas agree with the reality of things, there is certain real knowledge."¹ Two kinds of knowledge are here distinctly noted: first, the cognition of the agreement of our subjective ideas with one another; secondly, the cognition of the agreement of our ideas with the "reality of things," the "things" meant being extra-mental. The latter, called "certain real knowledge," is of

(1) *Essay*, IV., iv. 18. "Our simple ideas are all real and true, because they answer and agree to those powers of things which produce them in our minds; that being all that is requisite to make them real, and not fictions at pleasure. For, in simple ideas (as has been shown) the mind is wholly confined to the operation of things upon it, and can make to itself no simple idea, more than what it has received." (II., xxx. 2.) "Though our words signify nothing but our ideas, yet being designed by them to signify things, the truth they contain when put into propositions will be only verbal, when they stand for ideas in the mind that have not an agreement with the reality of things. And therefore truth as well as knowledge may well come under the distinction of verbal and real; that being only verbal truth, wherein terms are joined according to the agreement or disagreement of the ideas they stand for, without regarding whether our ideas are such as really have, or are capable of having, an existence in nature. But then it is they contain real truth, when these signs are joined, as our ideas agree; and when our ideas are such as we know are capable of having an existence in nature; which in substances we can not know, but by knowing that such have existed." (IV., v. 8.)

two kinds, determined by the two modes of conformity of ideas to extra-mental qualities which we have just been considering.

It is a matter of regret that, though Locke clearly announced, as is seen in the above extracts, the distinction of the two modes of real knowledge, or conformity of our ideas to external qualities, he did little, I may say nothing, to illustrate, justify and establish it. He is perhaps clear and full enough regarding the conformity of our ideas of the secondary qualities, as "constant effects," "marks," but not resemblances, to the objective qualities considered as "powers"; but, as to the other mode of conformity, the resemblance of our ideas of the primary qualities to the external primary qualities, he plainly states and assumes it, and stops there, never making any effort to show how it is possible and to establish it. This, however, was the chief thing of all, which needed to be established before everything else, on which the very genuineness of the distinction itself depended.

Locke's use of the plain terms "resemblance," "exact resemblance," "pattern," "image," "copy," etc., would lead us to suppose he meant that ideas of the length, surfaces, and so forth, of material objects have themselves a real, actual likeness to them. But he must not be understood so literally. All he can be said to mean is, that our ideas of the primary qualities represent qualities that are really in objects, and just as they are; that they represent these qualities to the mind as truly as if they were literal resemblances or images, or give them as truly as if we had immediate or presentative knowledge of them. Not

employing the principle of literal representation, or any other principle, to explain his theory of resemblance, he leaves it without any explanation or justification whatever. But this amounts also to an entire failure to elucidate or support the assumed difference between the ideas of the primary as resembling, and the ideas of the secondary as not resembling, objective qualities. He satisfies himself with the mere assertion of the difference; and leaves his readers to wonder how he came at all to assume it, or, rather, with his scrutiny and independence, to accept it. Starting out with an express statement of this important distinction, he not only fails to clarify and establish it, but comes in the end really to give it up or to make nothing of it, in holding apparently that every mode of conformity, whether the resemblance of the ideas of the primary qualities, or the mere correspondence of the ideas of the secondary, in short all perception of the external, is inexplicable, and must simply be referred to the "wisdom and will of our Maker." In truth, the primary idea of externality, in any respect, and the idea of objective extension, are wholly unaccounted for in the philosophy of Locke. How these ideas are possible by the only conditions and processes of knowledge which he recognized; why any ideas or sensations should ever be referred to external things, as being copies of them or not; why even any object should be supposed to exist outside of the mind, is left by Locke without real explanation, further than what is contained in declarations like the following from his *Examination of P. Malebranche's Opinion*: "If I should say that it is possible God has made our souls so, and so united

them to our bodies that, upon certain motions made in our bodies by external objects, the soul should have such or such perceptions or ideas, though in a way inconceivable to us; this perhaps would appear as true and as instructive a proposition as what is so positively laid down." ¹ In this view and mode of expression Locke is closely imitated by Reid. The assumption which these two great men make of the Divine Agency in the perception of the external, is no doubt true; but the science of knowledge can not start with this assumption, and can not stop with it. The questions of externality, of objective extension, of the conformity of our ideas or sensations to objective qualities, are the great questions pertaining to the cognition of matter and the external. Locke has made some important utterances in regard to them; but his treatment of them is in no small degree confused, defective and unfortunate.

With special reference to Locke's presentation of the distinction of primary and secondary qualities, and of the conformity of subjective ideas to objective qualities, Berkeley taught, on the contrary, that an idea can not be like a material quality or anything else, except only another idea; that if an idea were like an external and material quality, it could never be known to be so; that "dead" matter could never produce ideas in the mind; that the so-called primary qualities of matter are as really within the mind as the subjective colors, tastes, etc., and that the objective and subjective qualities are inseparably united; ²

(1) Sect. 8. See *Essay*, IV., iv. 4.

(2) *Principles*, sect. x.

that, in fine, matter is not provable and does not exist. This is, in brief, Berkeley's immaterialism, with which he headed the great idealistic defection from Locke's philosophy of external perception and dualism. Berkeley's philosophy is not so much the logical sequence, as the misfortune, of Locke's. It is a course of skeptical assumption starting from the obscurities and defects of Locke's theory, and blind to the real worth of its fundamental principles. Locke certainly never did justice to the great doctrine of the twofold conformity or representation; and the imperfect condition in which he left it has always been an occasion of skeptical, idealistic and erratic thinking. Berkeley's striking off from it into subjective idealism, was a prodigal departure from the line of truth.

Realists of the Kantian order that hold to the existence both of phenomena and external noumena or things-in-themselves, but deny that the latter are cognizable, expressly reject the first mode of conformity of ideas to external things taught by Locke, resemblance, and expressly accept the second mode, correspondence as "constant effect." The terms "symbol," "interpretation," etc., are used by many of these writers to denote this same correspondence. Our sensations, or ideas of external qualities both primary and secondary, they say, are effects, signs, symbols, but in no measure likenesses or copies, of the qualities.¹ There are obvious difficulties in thus

(1) It is affirmed by Helmholtz: "Our sensations are merely signs of changes taking place in the external world, and can only be regarded as pictures in that they represent succession in time." (*Popular Lectures*, first series (Atkinson tr.), p. 393.)

severing the two modes of conformity, symbolism and real representation, and in excluding the latter, which these philosophers have not sufficiently considered, and which are indeed insuperable. If the perceptive modes are not more than mere symbols of external realities, it can never be proved that they are not less. It admits of clear demonstration that symbolism and the conformity of resemblance must stand or fall together.

Notwithstanding Locke's imperfect treatment of the twofold conformity of ideas to external material qualities, yet in affirming it he gave utterance to a true principle, and one of the primary principles pertaining to the cognition of the external world. It will now be our endeavor to show the nature and value of this principle; to exhibit the possibility of it; to distinguish accurately the two modes of conformity, giving the grounds for distinguishing them, and comparing them as to their order in time and in importance; to apply the principle to the perception of matter; and to point out, in connection, the course, as respects Locke, which Berkelev ought to have taken regarding the reality and cognition of matter instead of the course which he did take.

As preliminary to this, it will be well at this place to consider briefly the character of matter. We come, no doubt, to the character of matter,—and by matter in this discussion is meant chiefly palpable material individual objects,—through our ideas and the perceptive processes which we are about to consider; but it will be an advantage here, as it is often in scientific discussion, to reverse the natural temporal order of facts. What we shall now take to be

the nature of matter must of course be hereafter confirmed by the principles and processes of perception.

Matter has three prime qualities, viz.: persistence or permanence, force or resistance, and spatial extension. A body has as many forces, or modes of force, as it has powers to excite different affections of mind and to resist our effort. Magnitude, figure, and solidity are different modes of extension. These varied modes of extension and force correspond to Locke's objective "primary" and "secondary" qualities. It was formerly thought by many that matter does not possess internal force or forces, but with its extension is inactive. Berkeley represented matter as being, according to the popular philosophy, "dead." But science has shown that matter is not "dead," but is the seat of forces and motions. On the other hand, there has been and is now a powerful effort to maintain that real matter, matter as it exists in itself independent of the mind, has no extension, but is only unextended force. It is said that to exist is to act or to be a cause; that extension is not an original and real quality of anything, but at best only an apparent quality; that, as Leibnitz taught, no extended thing can be a unit.

Matter has both force and extension. We would not know it if it did not possess force, if it did not resist our compression and excite various sense-affections; but we know as certainly that it is extended as that it is dynamic. And these two attributes must not only be supposed to be the associated properties of perceptible masses or portions of matter, but also of atoms or the conjectural primary elements of matter,

whatever they may be. Even if these primary elements should not be solid, indivisible substance, but only centers of force or "vortex atoms," they must still be thought to be extended.

Against the doctrine that extension is a primordial property of matter, Mr. H. Spencer holds the theory that the "resistance-attribute of Matter must be regarded as primordial, and the space-attribute as derivative": "of these two inseparable elements the resistance is primary, and the extension secondary."¹ But his argument, which is one of the most elaborate, to prove that extension is derived from unextended force or sequence, is an eminent example of dogmatic illogicalness. It is demonstrable that the extension which he claims to derive from sequence is brought in surreptitiously. Extension is tacitly assumed in ambiguous terms, such as "serial," "coexistence," "relative positions," and in the means of proof. Without this assumption, his proof could not go a step beyond what it pretends to start with, namely, sequence and pure temporal coexistence. His total failure as to proof, like that of other writers, so far confirms extension as an original property of matter.

The significant assumption that an extended thing can not be a unit, or that extension and unity are incompatible, we have already noticed when treating of the extension of sensations. Whether this assumption be true, depends on what may be meant by unity. If by the unity of a thing be meant, that all is in the whole and all in every part, we must allow that no

(1) *First Principles*, p. 166.

extended thing can be conceived to possess it. Only of an unextended thing can we say, with any semblance of truth, that all is in the whole and all in every part; and, strictly, it can not be said of an unextended thing, for if there be a whole, there are no parts. But there is a true species of unity that belongs to extended matter, to the perceptible masses of it that form our common material objects, namely, a balanced condition of the elementary particles, by means of which objects have an extension very permanent in all its dimensions. Whatever may be the inter-spaces, the mutual attractions and repulsions, the far-reaching radiant forces, of the simple elements of any material object, yet these elements constitute a self-centered, individual, permanent object, having very stable and unchanging extension. The extension of the individual object is not phenomenal only, but real. It exists objectively as it appears. Here is a brick that has been in this wall for over fifty years. Whatever may be the nature of its elementary particles, whether pure centers of force, rotatory ethereal rings, or atoms of associated solid substance and force, and if these particles be severed by space intervals that are very great compared with their own extensions, it is a unit. Its elements are so combined as to constitute a distinct, extended, permanent thing; its extension has undergone no perceptible change since it was laid in the wall. There is no difficulty in seeing that this unit of bounded, balanced elements may have, as a unit, as a whole, permanent and unchanging real extension.

This species of unity allows spaces between the constituent elements. There is no conclusive reason,

however, for affirming that matter, as the material atom, may not have the closer unity of a permanent extended solid, without any internal unfilled spaces, though not having "all in every part." Divisibility may continue to be imaginable, or representable by mathematical symbols, where it does not continue to be real. Both these forms of unity,—that of the discontinuous mass, and that of the continuous atom,—may exist with extension; and either of them is all we need contend for as a ground for holding that material things are units possessing real extension. We may then say of matter that for it to be, is both to be active and to be extended; that its being includes both activity and extension in unity. But there is a mode of unity, lying, we may say, between these two forms of unity and the perfect unity of having "all in the whole and all in every part," which matter does not possess; namely, the unity which is implied in, or is the basis of, pervading or extended consciousness. Having considered so far the nature of matter, let us now return to the starting-place of the perception of matter.

The chief original materials and basis of this perception are our consciousness of internal power, and our tactual and muscular and others of the motor sensations; but the other special sensations, chiefly the visual, contribute greatly to the extension and completeness of our particular and general perception of the external world. Before the cognition of anything external to the mind, we may have, in the tactual sensations alone, the consciousness of at least linear and superficial extension. This is possible because the tactual sensations are, in themselves,

as pure modes of mind, extended. Furthermore, by means of the coöperation of the tactual and muscular sensations, through their original coexistence in the same locomotive and prehensile organs, and through the acquired associations of the muscular sensations of movement with separate tracts of the tactual surface, and by means of pressure on the superficies or the interaction and mutual embraces of our locomotive organs,—by these various means, we possess, before the real cognition of any material thing, the cognition of trinal extension. This antecedent perception of extension in all its dimensions within the sphere of the mind, in the pure modes of mind, because of the real extension of mind, is the condition, the basis, of our cognition of every material object, body and not-body. It is the ground of the representation of external extended realities. It makes possible Locke's conformity of "resemblance" between ideas or perceptions and these realities. When a sharp edge is laid over the palm of the hand, the sensation excited actually resembles the edge in spatial length, so far as the contact really exists. When any object presses the palm, the tactual sensation excited literally represents the impressing surface, so far as the contact goes, in magnitude and form.

On these principles, we can see how our perceptions may be real resemblances, as to the primary qualities of magnitude and form, of at least small portions of matter. But there is no difficulty remaining in the way of understanding how we may truly represent, as we commonly suppose we do, objects of many thousand times greater bulk than our own

body or than any of our sense organs. The possibility existing of real resemblance to small bodies to begin with, the whole is explicable by the well known capability of the senses to instruct one another and to borrow from one another; especially by the capability of the visual sense to borrow and employ, through its association with touch, the standard of measure of touch (which is the real or primary standard) and to represent by means of its marvelously fine nervous expanse, in one sensation, many distinct and successive sensations of touch; or its capability to repeat or multiply, in representation, a simple sensation of touch, or a perception of touch and muscle, very many times in one or all of the dimensions of extension. On the ground of this original capacity of the visual sense and of this relation of the visual to the tactual sensations, we may truly say that the perceptions by vision of great bodies are resemblances of them. They truly represent these bodies, though they are not resemblances of them in the same literal sense as the tactual sensations are the resemblances of the primary qualities of small bodies. They are true representations, yet they are also, from their relation to the tactual and muscular sensations, partially symbols; for by a small real extension they represent a very great real extension.

But now the deeper and more difficult question presents itself. Even if our sensations are able to be, and really are, resemblances of the primary qualities, the magnitude and form, of material objects, how comes the fact of resemblance to be known? how can sensations which are purely mental, and which alone are immediately known, be known to picture

qualities that are extra-mental? To do this seems to necessitate the comparison of the sensations and the external objects; and would not such comparison require, as the idealists vehemently hold, a preceding, independent knowledge of the object, a knowledge as really immediate as that of the representative perception itself? or require a higher thought to include both the representative perception and the object? This radical question could not escape Locke. He asks: "How shall the mind, when it perceives nothing but its own ideas, know that they agree with things themselves?" But the answer which he immediately gives is certainly very indirect and insufficient. He straightly faces the problem, but at once his thought glances. "This though it seems not to want difficulty, yet, I think, there be two sorts of ideas that we may be assured agree with things. The first are simple ideas, which since the mind, as has been showed, can by no means make to itself, must necessarily be the product of things operating on the mind in a natural way, and producing therein those perceptions which by the wisdom and will of our Maker they are ordained and adapted to. From whence it follows, that simple ideas are not fictions of our fancies, but the natural and regular productions of things without us, really operating upon us, and so carry with them all the conformity which is intended or which our state requires; for they represent to us things under those appearances which they are fitted to produce in us, whereby we are enabled to distinguish the sorts of particular substances, to discern the states they are in, and so to take them for our

necessities and to apply them to our uses."¹ This answer is good as far as it goes, but it is yet plainly very inadequate.

It is important to consider here, first, briefly, the origin of the simple idea of externality or exteriority, that is, of spatial (not temporal) exteriority. The origin of this idea requires distinct consideration, because there is no idea that psychologists so commonly and easily assume, and so entirely leave unaccounted for. As already remarked, Locke gives no explanation of it; and a like failure is a radical defect in the philosophy of many of his successors.

Our original notion of spatial externality is obtained within the sphere of the mind itself, from the reciprocal spatial outness of sensations. Sensations are most distinctly cognized on the tactile surface of the hand, arm, face, and of other parts of the body, as spatially apart; and they are not only merely perceived as apart, but the absolute extent of their separation is with some accuracy perceived. In the knowledge of spatial externality originally acquired thus within the sphere of the mind itself, through the separation of one sensation from another and by the unity of consciousness, an essential condition is provided for the cognition of the reciprocal externality of mind and outer things. To perceive the spatial outness of sensations within the limits of the mind, prepares us to perceive the spatial outness of the mind and exterior objects.

Thus furnished with the original idea of spatial externality, and also with the idea of extension, the

(1) *Essay*, IV., iv. 3. 4.

perceptive faculty readily advances to the apprehension of extended objects external to the sphere of the mind. It makes this advance especially through the experiences of the interaction, the reciprocal pressing, grasping, pulling, of our locomotive sense-organs; and through the comparison of such experiences as we have, when with one hand we first press or grasp the other hand, and immediately afterwards press or grasp an outer or extra-corporeal object.¹ In the embrace of one organ by the other, we are cognizant, through the tactual and muscular sensibility of both organs, of one as really external to the other. When next an outer object occupies the place of the embraced sensate object, the mind, because of its previous experiences of the sensate object, including the knowledge of its real extension, infers the existence and real extension of the extra-corporeal object now holding the place of the sensate object. In the first instance, we are conscious of sensations with the consciousness of self as their occasion or cause. In the second instance, we are conscious of sensations without the consciousness of self as a cause; and therefore conjecture or infer a cause distinct from and external to self. Sensations that occur without the consciousness of self as cause or occasion, suggest an occasion distinct from self, because of the previous association with the conscious subjective occasion. From the known interaction within the sphere of the mind, we reason to the interaction between the mind and the extra-mental. The inference of objects

(1) There is included the contrast of "single touches" and "double touches."

external to the mind thus comes under the principle of causation, and is one of the grand instances of that principle. In the cognition of external extended objects or causes, two main principles are therefore concerned: first, the principle of spatial exteriority and extension within the mind; secondly, the principle of causality within the mind. By the coöperation of these principles, and on the basis of them, we are enabled, in the manner just considered, to infer a cause distinct from and exterior to the mind, without assuming any extraordinary *a priori* subjective "tendency," "principle of intuition," without appealing to any bare force of relativity or association, to any necessity of causation, to any necessity of knowing material thing or object and subject as correlatives or opposites.¹

From the first inferences, which are but vague, of extra-mental and independent causes or occasions, the mind by repetitions gradually advances to the clear induction and very strong conviction of external causes that are extended, that are distinct from our body, and non-spiritual.

We reason from extended internal effects to extended external occasions. Our extended sensations suggest extended excitants; and only on this ground can such a suggestion occur. It would seem to be forever impossible to reason, or to get in any wise, to an extended objective cause from an unextended subjective effect.

The exterior extended objects which we have

(1) Yet the inference may be to some extent promoted by inherited mental inclination.

had more prominently in mind heretofore have been extra-corporeal. The material object, however, nearest to the mind is the body, which is the medium between the mind and all other material objects. The body as nearest to and pervaded by the mind, is gradually separated, in perception, amidst the chaos of our first experiences, and in connection with our perception of extra-corporeal things, from both the mind which pervades it and extra-corporeal things. This separation is effected chiefly by means of our voluntary and involuntary experiences with the body, by the apprehension of the limits of our possession of it, so to speak, or command over it, by comparison of it with outer objects as to constancy of association with the mind, and as to the degree of readiness and power of control by the mind. The cognition of objects outside of the mind and the body, before the clear cognition of the body as a distinct entity, greatly aids from the first in separating the body from the mind, and in associating it with the outer objects with which, in its elements, it belongs.

As the first occasion or cause which we know anything about is the self, the natural tendency in our earlier inferences of external causes is to assimilate them to self. This primitive tendency is seen in children and savages. But it probably does not require long experience to convince us that we must not attribute all the properties of self to many external objects. We learn before long that, while external objects possess permanence and extension like the mind's, they do not possess the mind's qualities of personality, that they are not self-conscious

and self-moving; and thus come to the clear discrimination and perception of plain material objects.

In the way here briefly set forth we become cognizant that our ideas of the qualities of material objects conform by real resemblance to the external qualities. It is a remarkable instance of reasoning, or movement of thought from the known to the unknown. From subjective interaction, under space conditions, thought passes to the inference of interaction between subject and object,—to the inference of an object wholly exterior to the realm of mind and thought, and independent. Pure modes of mind knowingly represent qualities and entities that are entirely outside of mind. The mind, truly, knows only through its own modes; but yet through its own modes it knows what is spatially exterior to and independent of itself. Such mediate knowledge can not be called a contradiction of reason, but is a clear possibility. In its original perceptions of matter, the mind embraces small portions of it in a manner like that in which certain simple water animals spontaneously seize and infold, for sustenance, particles that float against their superficies. First of all, and the basis of all, is the original, underived, immediate cognition of extension. This implies real extension as a quality of sensations and consciousness, which again implies the extension of real mind. Mind and matter, different as substances, and different as to many qualities, are alike in being extended. This likeness as to the quality of extension is an indispensable condition of the perception of matter as it exists.

It can not be denied that an important conces-

sion is here made to the doctrine of the identity of mind and matter. But it seems it must come to be admitted in the end, as a fundamental fact, that for men to attempt to explain the perception of matter, and, more generally, to attempt to construct the science of knowledge and being, while holding that extension is not a quality of mind, and the notion of it is not a primary and original notion or not coördinate as such with the notions of time and power, is in vain. The result of the attempt always involves some fallacious derivation of the notion of extension from the notion of time, or fallacious symbolism or duality of consciousness, or subreption of the conclusion, and fails to answer the demands of all the data. We have the immediate simple knowledge or the consciousness of extension in sensations, and on this immediate and secure basis we are able to receive, in knowledge, the external world. That, on the contrary, a punctual mind should be conscious of extension, where there is no real extension present, and can be no original and real experience of extension, but only of non-extension, or non-extended elements, and that of itself it should construct and spread out the wide scene of the external natural world, can not be possible. Although the punctual mind may be supposed to be helped, in this extraordinary synthesis and objectivization, by innate forms, regulative principles of intuition, belief, etc., it is a fanciful hypothesis which Lockians can not accept.¹

(1) To the view of the perception of the external above presented some may object, that the Creator would not leave so important and so extensive a part of our knowledge as that of the external world to be acquired mediately or by inference; and

Here we shall stop in our direct course very briefly to consider several leading hypotheses of the perception of matter or belief in its existence, which are more or less opposed to that just set forth above. Of these, the first we shall notice is that of Dr. Thomas Brown.

The main characteristics of Dr. Brown's hypothesis are presented in the following extract: "To what, then, are we to ascribe the belief of external reality which now accompanies our sensation of touch? It appears to me to depend on the feeling of resistance, which, breaking in without any known cause of difference on an accustomed series of feelings [as when an object hinders the closing of the fingers], and combining with the notion of extension, and consequently of divisibility, previously acquired, furnishes the elements of that compound notion which we term the notion of matter. Extension and resistance—to combine these simple notions in *something which is not ourselves*, and to have the notion of matter, are precisely the same thing."¹

The defects of this doctrine are very grave. Especially there is no adequate account given of the idea of extension, or of the idea of exteriority to mind, *i. e.*, spatial exteriority. Further, the idea of a cause distinct from the self is far from being satisfactorily explained. Dr. Brown holds the groundless theory

hold that there must be some innate absolute necessity of knowledge, or unmediated intuition. This presumption can not be allowed to have any real weight; for the theory of inference is certainly not inconsistent with other very important facts and conditions of our earthly life and welfare.

(1) *Lecture xviii.*

that the idea of length in extension is derived from the idea of length in time. The idea of length in extension certainly can not be so derived; and, therefore, he is not logically or legitimately in possession of that idea. Again, if there be no legitimate knowledge of extension, there can be no legitimate knowledge of any reciprocal spatial exteriority whatever. The only length, divisibility, parts, and exteriority, which he can rightly claim to have, are those of time. The supposition that we necessarily think of a cause distinct from the mind, when a feeling unexpectedly breaks into an accustomed series of feelings, is not sufficiently supported. A wider basis of experience seems to be required from which to conceive such a cause. There must be, apparently, for example, the experience of real subjective causation; and comparison, such as we have above described, of instances when sensations occur with the consciousness of their being occasioned by the action of the mind, with instances when they occur without this consciousness. We seem able to reason to, or to think of, a cause distinct from the mind, and external and extended, not from such mere sudden entrance of a feeling, considered by itself; but only from the ground of the mind's original, underived, knowledge of subjective extension and reciprocal exteriority involved in its experience of sensations, and of the contrast of exerting and not exerting its own causality.

Mr. J. S. Mill attempting, as a disciple of Hume, to account for the strong and widely prevalent belief in matter as a permanent something outside and independent of the mind or mental series, proposes the

following hypothesis: "Whatever relation we find to exist between any one of our sensations and something different from *it* [another sensation], that same relation we have no difficulty in conceiving to exist between the sum of all our sensations and something different from *them*. The difference which our consciousness recognizes between one sensation and another, gives the general notion of difference, and inseparably associates with every sensation we have the feeling of its being different from other things; and when once this association has been formed, we can no longer conceive anything, without being able, and even being compelled, to form also the conception of something different from it. This familiarity with the idea of something different from *each* thing we know, makes it natural and easy to form the notion of something different from *all* things that we know, collectively as well as individually. It is true we can form no conception of what such a thing can be."¹

It would certainly be an extraordinary act of thought to surmise or conceive, from the numerical and qualitative differences of pure subjective sensations, something spatially beyond and independent of all sensations or the mind. We may well be skeptical of the possibility of the act, with no other basis and occasion than that recognized by Mr. Mill. It should be observed that he agrees with Brown in the theory that the idea of spatial extension is derived from the idea of time. The very weighty obligation was then upon him to show how, from the succession

(1) *Exam. Hamilton*, I., pp. 246, 247.

and coexistence of sensations that are originally not extended and not spatially severed, can arise the conjecture or belief of extended things spatially outside of mind. Mr. Mill acknowledges the obligation; but his attempt to meet it must be classed with that of Brown and others as a futile shuffling of words, a sheer begging of what is not proved. It is not demonstrated how we may ever get, in thought or conception, beyond successive and coexistent sensations, or a permanent entity, or a permanent possibility of sensation, subsisting in a mathematical point.

The following theory of the belief in the external existence of matter is supported by Mr. H. Spencer: "When we are taught that a piece of matter, regarded by us as existing externally, can not be really known, but that we can know only certain impressions produced on us, we are yet, by the relativity of our thought, compelled to think of these in relation to a positive cause—the notion of a real existence which generated these impressions becomes nascent." ¹

(1) *First Principles*, p. 93. "Mysterious as seems the consciousness of something which is yet out of consciousness, the inquirer finds that he alleges the reality of this something in virtue of the ultimate law—he is obliged to think it." (*Psychology*, II., 452.) He says also after Brown: "If by antecedent is meant constant or uniform antecedent (and any other meaning is suicidal), then the proposition that the antecedent of sound exists only in consciousness, is absolutely irreconcilable with the fact that the feeling of sound abruptly breaks in upon the series of feelings otherwise determined, when no antecedent of the specified kind has occurred." (*Ib.*, I., 209.)

A view similar to that of the first extracts is advocated by Sir W. Hamilton thus: "The existence of an extra-organic world is apprehended in the consciousness that our locomotive energy

With this hypothesis Mr. Spencer attempts to force the passage, so to speak, from the internal to the external; but apparently without success. His argument is well met by simply denying the assumed original compulsory relativity, and asserting that we can first safely or rightly pass from the internal to the external only by way of relativity or inference that is not compulsory, or not an arbitrary or blind necessity. Necessitation to thought or induction must not be too easily assumed or admitted. This much, however, we are obliged to admit, that in developed life there is an irresistible tendency to refer sensations to extra-mental occasions. But it seems to be a growth of experience which begins with an inference that, as already described, is wholly spontaneous or unforced. Further, as Mr. Spencer agrees with the preceding philosophers in the unreasonable hypothesis that extension is derived from succession or time, it is as impossible for him as for them justly to assume spatial externality and the existence of objects outside the sphere of consciousness, or to get beyond his original world of pure time. At the close of his argumentation, all the matter and objects, all the externality and internality, he can logically speak of are inclosed in an unextended point.

But to have a full understanding of Mr. Spencer's

is resisted, and not resisted by aught in our organism itself. For in the consciousness of being thus resisted is involved as a correlative the consciousness of a resisting something external to our organism." (Edition of *Reid*, p. 882.) He says again more generally: "It is impossible that we can be conscious of an act without being conscious of the object to which that act is relative." (*Metaphysics*, p. 147.)

theory of the cognition of external matter, we must remember his doctrine, that matter in itself is, beyond the fact of bare existence or persistence, "unknowable," "incomprehensible." He says the conscious effects produced in us by matter, or the notions we have of extended external material objects, have not the slightest resemblance to matter in itself or as it exists beyond our mind or consciousness; they are only the most remote and uninforming symbols. He describes matter as an unextended something beyond and independent of consciousness, and possessing permanence and a mode of power or force. "This conception uniting independence, permanence, and force, is the conception we have of matter."¹ As the chief ground for the doctrine of incomprehensibility, he holds that we do not know the extent of the divisibility of matter, and also, therefore, do not know the nature of the ultimate elements of matter and the secret of their cohesion. It must be granted that we do not know how far matter is divisible, or what are the form and essence of its last elements, and that matter is so far unknowable; but to conclude from this to the "absolute incomprehensibility" of matter is a grave error. In so concluding, Mr. Spencer surrenders to idealism and skepticism all he can, and more.

We have made the admission that the limits to the divisibility of matter, and the figure and nature of its ultimate constituents, are unknown; but this fact of the unknownness of constituents in no wise requires or warrants the conclusion that the ordinary

(1) *Psychology*, II., p. 483.

material aggregates, masses, objects, which the constituents compose, are entirely unknown. Of these objects we certainly know, in addition to their persistence or bare existence, their extension in all its dimensions. Those same bodies whose divisibility and final elements are said to be unknowable, are extended and are so known. We as certainly know their extension as their reality. It is the knowable extension that enables us to talk intelligently of the unknowable divisibility, elements and cohesion. How far this inkstand is divisible, and what are the form and nature of the elements that would be obtained if division were by some means carried to the utmost, I know not; but the spatial dimensions, the shape and magnitude, of the composite inkstand I surely know. They are its permanent property, accurately perceivable, and appearing the same from day to day and year to year. A condition of the perception are the extended effects that the objective extension produces in consciousness.

We must be brief. It should be maintained in general that to deny the originality of the idea of extension, and the originality and knowableness of the attribute of extension, is a fundamental error, potential of the gravest evil consequences. Extension is an original property of sensations and percepts, and also an original and cognizable property of matter; and matter should accordingly be defined as a distinct and independent something possessing permanence, a mode of force or power, *and extension*. On this ground we may and should combat idealism and agnosticism. From this notice of hypotheses we

now proceed in the direct exposition of the perception of matter.

In the discussion hitherto of the cognition of matter, especially masses of matter, we have considered only the primary qualities, as extension, resistance or solidity. Let us now pass to consider the secondary qualities, and especially the character of their effects on the mind in perception. Locke, as we have seen, calls these qualities "powers." They are powers in bodies to produce movements in media, which movements affect our senses, exciting diverse sensations. The sensations of sound are the effects of progressive vibratory movements set a going ordinarily in the air by the impulses of bodies. The sensations of light and heat are the effects of similar, but much more minute and rapid movements produced, by molecular motions, in the luminiferous ether. The secondary qualities of bodies are these motions.

As was distinctly and truly stated by Locke, there is a great difference in the conformity of our sensations as regards the primary and secondary qualities of matter. Our sensations resemble the primary qualities; the secondary qualities they do not resemble, but only correspond to them as constant non-resembling effects. Here arise several very important questions which demand immediate consideration. Are not those sensations which we say resemble, and those which we say only correspond to, but do not resemble, the material qualities, in many cases only attributes of the same individual sensations? Are we not, for instance, in individual

tactual sensations conscious of both extension and heat or the special tactual quality; and in individual retinal sensations, of both extension and color? And, further, if this be the case, how do we ever come so to separate the qualities of the same primitive individual sensation or of the same perception, as to declare that one quality is a resemblance of a quality of matter, and another is an effect, but not a resemblance, of a different quality of matter? These questions bring us to the bottom of the problem regarding the perception and distinction of material qualities.

As to the first question, it must be answered that what we often denominate "ideas" or sensations that resemble and do not resemble material qualities, are attributes of the same individual sensations. The special feeling or quality of touch, by which it distinguishes itself from taste, color, etc., and the consciousness of extension, are both attributes of the same original individual sensation. This union of different attributes in the same sensation, is the subjective correspondence to the indissoluble union between extension and force in masses or the ultimate constituents of matter.

If this be the correct answer to the first question, what should be the answer to the second, regarding the discrimination of the qualities of the same sensation or perception as resembling and not resembling external qualities? How come we to distinguish them as to correspondence, and say that the extension of a tactual sensation is like the quality of a material object, but the special quality not? This question has important implications and associated

points which must be distinctly considered; as, for example, the projection of sounds and colors.

We may remark here, parenthetically, that it has often been represented as a primary matter respecting perception, to distinguish in percepts the constituents contributed to them from the outside and those contributed by the mind itself. For instance, Kant says: "It may well be that even our experiential knowledge is a compound of that which we receive through impressions, and that which our faculty of knowledge supplies of itself on occasion of sense impressions."¹ Sir W. Hamilton declares something analogous: "Sense itself may be a source of error, if we do not analyze and distinguish what elements, in an act of perception, belong to the outward reality, what to the outward medium, and what to the action of sense itself."² But to distinguish in a percept the elements of external origin from the elements furnished by the mind itself, is no proper or genuine problem; for the reason that percepts are wholly mental; they receive no element from the outside at all; they are composed of mental elements alone, or are pure complex modes of mind. The extension of percepts is as really in and of the mind as their sounds and colors. On this point, Berkeley's argumentation must be allowed to be conclusive. But a genuine and very important problem, as to the perception of matter, is the one just spoken of above, namely, to determine those attributes of the pure subjective percepts that image properties of matter, and those that do not image properties of matter; or the attributes that

(1) *Kritik d. r. V.*, p. 33.

(2) *Metaphysics*, p. 103.

resemble properties of matter, and those that only correspond to them in duration or as constant non-resembling effects.

Taking sensations and perceptions, as to each and all their attributes, to be pure affections of mind, we may say regarding the indivisible tactual sensation that the discrimination of the two attributes mentioned, the one as resembling, the other as not resembling, a material quality, is a part of the whole process of perceiving the external reality. Because of the indissoluble union of the two qualities of the sensation, we are led to ascribe both of them to the same material thing or cause; but as this thing never reveals, in connection with its extension, any cognizable sign, any such sign or demonstration as the agent himself can give to himself, of feeling, we come, after a considerable time and variety of experience, clearly to discriminate, and to affirm resemblance between sensation and thing as to extension, and to deny it as to the special quality. This of tactile sensation.

Let us now proceed to consider more fully the closely related question of the projection of sounds and colors. The right understanding of projection will greatly help us to the solution of the main question. Sounds and colors are as purely subjective as the special tactile feeling; and yet, unlike the tactile feeling generally, are phenomenally projected to external things. They are not merely referred to an objective cause, but are themselves supposed to be objective, and not subjective. A spontaneous, irresistible tendency is developed to objectivize them and localize them upon objects. No one but a child

ascribes tactile feeling to a bell; but all men, the vulgar and the philosophic alike, involuntarily yield to the tendency to ascribe to it sound and color.

Here, it should be observed, is the point where the idealists have taken their stand against the objectivity of extension and matter most confidently. They have said with the assurance of full triumph, that as color is inseparable from form and magnitude, all form and magnitude are certainly as pure mental projections as color; that, just as both sounds and colors, which all readily allow to be in fact subjective, are phenomenally objectivized, so are extension and all material things but a deceptive projection of the mind; that, as the mind is deluded, or deludes itself, by its involuntary projections, it is deluded altogether in its thought of external matter; that, since some of the attributes of our percepts do not resemble properties of matter, therefore not one of them resembles a property of matter. Thus Berkeley: "They who assert that figure, motion, and the rest of the primary or original qualities, do exist without the mind in unthinkable substances, do at the same time acknowledge that colours, sounds, heat, cold, and such like secondary qualities, do not, which they tell us are sensations existing in the mind alone, that depend on and are occasioned by the different size, texture, and motion of the minute particles of matter. This they take for an undoubted truth, which they can demonstrate beyond all exception. Now if it be certain that those original qualities are inseparably united with the other sensible qualities, and not, even in thought, capable of being abstracted from them, it plainly follows that they exist only in the mind. But

I desire any one to reflect and try whether he can, by any abstraction of thought, conceive the extension and motion of a body without all other sensible qualities. For my own part, I see evidently that it is not in my power to frame an idea of a body extended and moved, but I must withal give it some colour or other sensible quality which is acknowledged to exist only in the mind. In short, extension, figure, and motion abstracted from all other qualities are inconceivable. Where, therefore, the other sensible qualities are, there must these be also, to-wit, in the mind and nowhere else." ¹ Berkeley's reasoning has been variously repeated, and is to-day ardently accepted, in part or in whole, by many. I add the following extracts from living writers, as examples: "The assurance we obtain by pure observation that bodies are coloured, is of precisely the same kind as is the assurance we obtain from the same source that they are extended and resisting." ² "The nature of our sensibility determines us to perceive vibrating objects as colored, and we can not perceive them otherwise; but the necessity is in ourselves. On this account the argument that things are colored because we must perceive them as such, loses all weight; and on the same account the argument that things are in space because we must intuit them spatially loses all its weight." ³ "We must then allow that idealism, in the sense of phenomenal or subjective existence of the world of things, is possible, and admits of no

(1) *Principles*, sect. x.

(2) Balfour, *Defense of Philosophic Doubt*, p. 253.

(3) Bowne, *Metaphysics*, 1st ed., p. 170.

decisive refutation. The admission is all the more easily made from the fact that so much of what common sense regards as undoubtedly objective is confessedly subjective.”¹

This subject of allied projection and conformity, though apparently very complex, and though really difficult to unravel chiefly because of the misconceptions that have formed around it, is in itself in fact simple, and admits of a clear explanation on the basis of realism, and a clear exhibition of the mistake and error of the idealists.

The primary mistake of the idealists regards the temporal order of the perceptive acts. Particularly, they do not mark the order of our primary perception of extended objects and our projection of sounds and colors. Now it is a fact, sufficiently confirmed by observation on persons recovering the power of sight from congenital defects, that, in our primary perceptions, we cognize the extension of material objects before we project colors to them; and the same is true of sounds. By means of the tactual and muscular and other of the motor (*c. g.*, joint and tendon) sensations, from which the sensations of

(1) Bowne, *Theory of Thought and Knowledge*, p. 323.

“Starting, therefore, with the presupposition of the independent existence, both of the world without and of the world within, and inquiring what contribution mind gives to our knowledge of the former, we find mind successively claiming for itself one element after another of that knowledge, until at length the whole has been brought within its own province, and the last unresolved fraction, the ultimate residuum of a reality beyond thought, has disappeared.” (Caird, *Philosophy of Religion*, p. 237. Cf. Lange’s *Hist. Materialism*, III., pp. 225, 228; Beneke’s *System der Metaphysik*, etc., p. 94; Lotze’s *Metaphysic*, p. 207.)

sound and color exist originally detached in consciousness as distinct sensations, we can and do originally make the cognition of material objects as extended, as perfectly blind and deaf persons may do, before the projection of sounds and colors; and it is a fact that we project sounds and colors to external objects, and come to think of them as if really associated with the primary qualities of these objects, only because of the previous cognition, by the tactual and muscular sensations, of these objects as extended,—because we are knowing extended external objects as the seat of the causes of sounds and colors. We refer the latter to the known place of their causes or excitants.

The primary experiences by which this projection is brought about are frequent. For example, we constantly perceive that when bodies are held before us by our hands, the sensations of color, smell, etc., are excited; and, again, that when the bodies are removed, and yet held by the hand, these sensations wholly or partially cease. When an apple is held near the nose, one sees color and smells perfume. When the apple is removed, one sees the color and smells the perfume no longer. By such experiences, which are very frequent from the first, we soon come to refer, with the greatest assurance, sensations of the secondary qualities to known external objects. But in this assurance is involved, with all persons, the erroneous assumption that the sensations, sounds, colors, are really objective, and have their place in or on external things. This is so because of the very early period in experience at which, through the involuntary action of the mind, the objectiviza-

tion of the sensations takes place. But afterwards, in the reflective and maturer experiences of the mind, we recover ourselves from this error, especially by those instances in which changes take place in colors, smells, sounds, etc., by internal changes and affections, as jaundice, while we have reason to believe that external objects remain in the primary qualities unchanged. These and the like experiences, combined with our knowledge of the possibility in sensations truly to represent external extended objects, and our knowledge of the great constancy of sensations to external objects as respects extension, enable us to see what must have been the original order in perceptions, and what is the true history of the projection of sounds and colors; enable us to see how subjective extension really resembles external extension, while colors and sounds do not resemble any external quality; how the extension of a color truly represents an objective quality, while the color (*i. e.*, the special quality of the color) does not. The leadership which is here maintained for the notion of external extension is now generally granted tacitly, in the doctrine that the sensations of the secondary qualities are excited by external vibratory motions, molecular and molar. These external motions presuppose spatial extension. To speak of them is to speak of spatial extension. It should be in addition remarked that this view of the projection of the sensations of the secondary qualities makes the assumption of any *a priori* "tendency" or "principle" to account for it quite unnecessary. These sensations are drawn away, so to speak, from the mind simply

by external extended objects previously known as their causes.

The above facts and considerations seem clearly and decisively to refute the reasoning of the idealists, especially their deduction, that, since sounds and colors, etc., though apparently objective, are really subjective, therefore all apparently objective extension is really subjective. If our projection of sounds and colors were as early as our cognition of realities as extended, or earlier; if it were not subsequent to, and in so great a degree dependent upon, this cognition; then the idealistic conclusion would have a show of reason; but as the case stands, the conclusion is baseless and perverse. It changes the order of facts; it makes effect that which is cause; it makes primary that which is secondary; by fallacious analogy it puts into the mind that which is outside.

We are now in a position to perceive clearly the fallacy which underlies the theory of correspondence between sensations and material objects advocated by those realists who hold that external material things exist but are unknowable, or that our sensations merely symbolize, but in no degree or manner resemble, external things, are effects but in no degree pictures. For, manifestly, the fact that sensations or qualities of sensations correspond, without any likeness, to objective qualities or things, could never be known or conjectured without the previous independent knowledge of correspondence with likeness. We must here know resemblance, before we can declare non-resemblance. We must know that there is conformity in something, before we can know that there is non-conformity in something else. We know all

external causes, on the basis of our primary knowledge of causes, as both *external* and *extended*. We therefore know cases in which sensations do not resemble external exciting qualities, because we have previous knowledge of cases in which they do resemble. But this fundamental fact of the sequence and dependence of symbolization upon resemblance, these realists do not recognize and admit. This is a chief defect of their reasoning. Where does this defect leave them? It leaves them in a punctual state of existence, without right or ability to speak of extension or externality at all. They have temporal externality and extension, or, in other words, they know sensations and other affections of mind as out of one another in time and as enduring; but they have logically no spatial externality and extension. To bring their reasoning to a stop we need only ask them, when they affirm that sensations do not resemble in any degree external objects as to the quality of extension, where they get the idea of externality and external things, on what grounds they assume their existence? This assumption they never can justify on their principles. The fact that all men still do assume or think of external extended objects is decisive proof of the incompleteness of their theory and of the necessity to look farther. Many of the symbolists, however, have a mode of rescuing themselves; which is, to endeavor to derive the idea of spatial externality and extension from sensations out of one another and enduring in time, or from what, by a stretch of words, is called temporal externality and extension; and to hold thereon that our ideas of extension are but symbols of reali-

ties that endure in time, but are not really extended in space. It is unnecessary for us to dwell here on the absolute failure of this attempted derivation. It is cited now only as an instance of some of the acutest intellects duped by one of the grossest fallacies.

We remark, in general, that though the possibility of true representation of externalities, by pure subjective modes, and the means and method of distinguishing that which is phenomenally projected out of the mind from that which is really external to the mind, or that which is truly subjective from that which is truly objective, have been confounded and darkened by idealistic mistake and fallacy more perhaps than any other matter in epistemological science; yet careful attention to the main facts discovers that this representation and discrimination are in themselves comparatively simple, and can be arranged in a simple theory. *First*, subjective extension can represent objective extension; while subjective non-extension can never represent, or even admit the thought of, extension subjective or objective. *Secondly*, the possible representation of external things by the subjective modes comes to be known as actual, through the notion of exteriority and of power made especially vivid by the interactions and reciprocal embraces of our sensitive moving organs. It is intelligible how, from the knowledge of the interactions of the sensitive extended organs, especially of the locomotive organs, the mind leaps to the inference of interaction between these organs and external extended objects. This is *the* leap of the mind from the known to the unknown, thereby the mind transcends in knowledge its own sphere.

Though every knowledge or thought is in itself wholly within the sphere of mind, or but a mode of mind, the mind is by these means able to represent objects that are entirely external to its sphere and independent. Though the mind does not really go beyond itself or thought does not really go beyond the sphere of the mind, though we know nothing immediately beside the mind and thought, and thought is in every instance a pure mental fact; yet the mind knowingly pictures, as to certain qualities, that which is outside of itself, it knowingly embraces and resists that which is exterior and independent. There is no apparent contradiction in its so doing. The comparison of our subjective notions with externals is possible in the *immediate* knowledge of the subjective notions and the *mediate* knowledge of externals. No immediate independent knowledge of the latter is required, as the idealists imagine. The only indispensable pre-condition is the knowledge of subjective extension, exteriority, power, and interaction. *Thirdly*, we find that there is no serious difficulty in understanding the phenomenal projection of the sensations excited by the secondary qualities of matter; and in distinguishing those attributes of our perceptions which resemble, from those attributes which, though excited by, do not resemble, but only symbolize, external qualities. The sensations of the secondary qualities are objectivized or detached, so to speak, from the mind at a very early period of experience, because of the attraction of external extended things previously known as their occasions. They would never be thought of as detached or extra-mental, if it were not for the preceding thought of

these external things. The retinal and auditory sensations, by their association with the tactual and muscular, become representatives and symbols of the latter; and refer themselves to and invest the external objects, already revealed by the tactual and muscular, as their causes. The very strong association thus formed, at a very early point in the experiences of every one, between the sensations of the secondary qualities and external objects, we are led in later years, by many facts of experience, to see is not an original association, but is formed between things that were originally, and are always really, existentially severed. We thus become able to draw the line between the subjective and the objective; between what the mind externalizes and what is in itself really external; between what in our perceptions resembles, and what does not resemble, but only symbolizes, material qualities; between external things as they really exist in their extensions, and our complex perceptions of them projected by the eye and ear. Idealistic objections are found to be not insuperable. They rather contribute to, by necessitating, clarification of the subject. *Fourthly*, Locke's doctrine of the twofold conformity of sensations to the qualities of material objects appears to be a true and fundamental principle of external perception. Conformity with resemblance, and conformity without resemblance, or symbolization, are both true; but they have their temporal order and relative importance. The knowledge of the former is antecedent to, and the condition of, the knowledge of the latter. We know that certain qualities of perceptions are constant effects of and *symbolize* some qualities of matter.

because we know that other qualities of perceptions are effects of and *resemble* other qualities of matter. The former knowledge is manifestly impossible without the latter. The two modes of conformity coexist from very early experience; but subsequently they are clearly discriminated.

Thus far in the discussion of representation and projection in perception, our attention has been fixed rather more closely upon the diverse qualities and elements of perceptions, and the possibility in perceptions, as pure subjective modes, to represent material objects, than upon the composition and unity of perceptions, and the possibility in them, as composite subjective modes, to represent external individuals. These latter points deserve further and distinct consideration. Our perceptions are not simple, but compound notions formed by the union of sensations, etc., furnished by the different senses and faculties. For example, into the notion of an apple enter sensations of touch, muscle, and the retina. The retinal sensation most vividly represents and recalls the others. These sensations are originally distinct; and their complete union in the perception requires some time. The composition into perceptions of the contributions of the different senses and faculties is, as has been already shown, a primary function of the intellect.

On this principle, that our perceptions are the result of internal synthesis of distinct internal materials, has been based what is probably the strongest argument that has ever been directed against genuine dualistic realism or against the view that our representations of external realities are true to these reali-

ties in very important particulars. Kant and his followers have contended that, because perceptions are plainly the internal compositions of the intellect or understanding, it is unreasonable to hold that they can truly represent external things; that the understanding "makes nature," and that there can be no real external nature which this constructed nature of the understanding images in any attribute; that, whatever might be said of our perceptions, if they were not the work of synthesis, but original, individual modes of mind, as we are conscious of them when formed, it can never be said that such complex synthetic modes have any likeness to external individuals.¹ This reasoning has turned the heads of many philosophic inquirers, and they have sunk into the reveries of idealism.

It must be granted, and it has been granted more than once in this work, that perceptions are pure internal or mental modes, and synthetic products of the intellect, made from sense and other materials originally scattered, so to speak, in the mind. But there is no such conflict, as the Kantians suppose, between this latter fact and the doctrine of real representation. We may grant that perceptions are pure subjective composites, and yet hold that they truly represent, in the important degree which has been claimed above, external material individual realities. The principles of external perception may be summed as follows: (1) Perceptions are, in themselves, purely subjective; (2) they are constructed by the action of

(1) Kant, *Kritik d. r. V.*, p. 115 f; Cohen, *Kant's Theorie der Erfahrung*, p. 135; Green, *Prolegomena to Ethics*, p. 43; Bowne, *Metaphysics*, 1st ed., p. 405.

the intellect; (3) they are, as subjective constructions, knowable as images, to a definite extent, of external independent things.

The Kantian theory labors from the first under a very serious misconception regarding the originality and nature of the notion of extension, and the leadership and supremacy of this notion in the construction and body of perceptions. Notwithstanding the fact that space is one of Kant's two *a priori* forms of sense, he yet, as has been already noticed, apparently regards our notion of extension, not of great extension only, but of the least measure or least perceptible or imaginable portion of extension, as a composition made by the understanding by virtue of one of its own forms, viz.: that of "unity."

To say nothing of the unintelligible relation, in this instance, of the "form" of sense and the "form" of the understanding, there appears to be a fundamental error here. No doubt our notions of great extensions are in an important sense synthetic, the product of the intellect; but not our notions of many small extensions. When I press a dime in the palm of my hand, I have a tactual sensation which embraces the notion of extension. This notion of extension is no composition by the intellect. It is an attribute of the individual sensation, antecedent to and independent of the work of the intellect. It is an original and simple quality of the sensation, as a sensation, before the intellect has begun to work on and combine sensations. Kant's sundering or distinction of understanding and sense with reference to the extension of such a sensation is certainly a radical error of his theory of perception. From the tactual sensations

we thus acquire original and simple notions of diverse extensions. More definite notions of simple extensions are given by the retinal sensations both before and after they have become representative of the tactual and muscular sensations and of great distances and magnitudes. The extension of a color is the original and simple quality of the color in itself, before and independently of the action of the intellect.

Now the simple unintellectualized sensations of touch are true representations of small external extensions. These limited sensations, containing notions of simple extensions, are real representations of the extensions of the small extra-mental objects exciting them. So far at least the theory of representation holds. Our notions of great extensions, however, are not simple, but complex, formed and unified by the intellect. But notwithstanding the fact of subjective composition, the theory of representation need not be given up, but can without difficulty be maintained also of them.

How the eye acts the intellect for the tactual and muscular senses, in the formation of the notions of large extensions, is easily understood, but is very remarkable, too. Not only does it become by association representative, by means of its extraordinary sensitive expanse, aided by its muscular sensations, of the tactual and muscular sensations of the locomotive and other organs, but repeats, enlarges, combines the latter sensations in representative notions of vast distances and magnitudes, measuring these by the standard of touch. It is able to form a representative continuum, in a single sensation, of many individual distinct tactile and muscular experiences, and thus

to furnish us with notions of magnitude many times greater than could ever be represented by the other two senses alone and unaided. The representations and compositions by the eye of tactual and muscular sensations may be in many instances verified by these senses, in our walking to and feeling the objects imaged by the eye. When they can not be verified, because of great magnitude and distance, we take them on the trust grounded on the instances when they can be.

Our complex notions of extension can be held to be representations of real objective extension, because the intellect in forming them is strictly synthetic, and not creative; that is, it contributes nothing to the elementary sensations, but simply combines them,—combines the simple notions of small extensions into complex notions of great extensions. According to the Kantian theory, apparently, the understanding forms the notion of an extended object out of experiences which reveal no extension, or out of pure experiences of succession, by means of what it contributes of itself. This is to reserve an extraordinary creative power for the intellect. It attributes all unity in extension to the intellect. Such unqualified originaive power this faculty does not possess. It forms complex notions of great extensions out of simple experiences of little extensions. Its elementary sense materials give in themselves notions of original simple units of extension. The mechanic forms a floor by putting board to board; and he can not make a greater expanse of floor than he has boards to make it out of. The intellect forms notions of extension out of elements that in themselves reveal

extension. It constructs complex notions of large unities of magnitude out of simple notions of small unities of magnitude.

When the mode of the intellect in producing our complex notions of external extended objects is rightly considered, it appears that though these notions are subjective compounds, they may truly represent external objects as to extension. The intellect in the construction of these compounds does not combine unextended sense units in a complex to which it supplies originally from itself the unity of extension. It finds extension already in the sense units; and the extension of its complex notions is only the sum of the extensions of the sense units or elementary notions.

Another primary misconception of the Kantian theory regards the place and character of the notion of extension amidst the other elements of the complex perceptions. The notion of extension is undoubtedly the leader in the formation of perceptions, and the superior attribute in them, constituting the, so to speak, framework or body of them. This notion draws tastes, smells, sounds, to itself in the composition of perceptions. How this takes place we have already seen in considering the objectivization of sounds, colors, etc. We first form the notion of external realities as extended. Knowing these external extended realities as the seat of the excitants of sounds, colors, we objectivize these sensations of the secondary qualities to the place of their excitants. All the sensations which any external object excites come thus, through the leadership of the idea of ex-

tension, to be compounded in a unity corresponding to the unity of the external object itself.

On these considerations regarding the real character of the work of the intellect in forming perceptions, and regarding the origin of the notion of extension and its supremacy in the full complex perceptions, we may maintain that, though perceptions are purely subjective and composite, they truly represent external realities as to the quality of extension; that, though our comprehensive notion of nature is constructed by the intellect, on the basis of the unity of the mind, it is true, as to the fundamental quality of extension, to real external nature, and is not merely a symbol of what is unpicturable or unknowable.

What now is the character of the matter which we have found to have real external existence independent of the mind? How far does it agree with, how far does it differ from, the matter of the popular view? Matter possesses in its independent existence the quality of extension in the different modes of magnitude, figure, and solidity, as they are known to us by our perceptive representations. To these modes of extension we may add the motions of masses, and also, with much assurance, molecular motions, the excitants of subjective color, heat, etc.¹

(1) While possessing extension in its different modes, matter must still be regarded as, in its internal constitution, discontinuous, or having its ultimate elements spatially separate. Molecules or atoms make extended masses by their vigorous mutual repulsion and equilibrium. The discontinuous masses are able to occasion continuous affections of our consciousness; but because, in part, of the grossness of our sense, we can not by it distinguish the atoms and interatomic spaces of any piece of matter from perfect homogeneity and continuity.

The material world has in its independent existence all its apparent extent, all its variety of objects, with their great diversity of magnitude and form, and all those conformities, adaptations and relations of things that extension and space make possible. But sounds, music, colors, all the so-called subjective secondary qualities, are in no degree objective, but wholly subjective, being a contribution and adornment phenomenally given to the external world from the mind. In itself, the material world, with all its variety of objects, and all its forces and motions, of mass and molecule, known and conjectured, is dark and silent as the grave. Of space it may be here said in brief: Space is really or in itself what it seems to all men to be, but with color or light excluded. The illumination of space is a phenomenal projection from our mind; but not the extension of space. Our idea of space is true to the independent reality of space so far as extension is concerned.

On these principles we have the ground of complete reconciliation between the philosophic and the popular view of the material world. These two views are not so far apart as the idealists and symbolists represent, and the reconciliation of them is not so remote and hopeless. The antagonism between the philosophers and the vulgar, as represented by them, would require a constitutional difference between the minds of the two classes. The real fundamental sameness, however, of all men, learned and unlearned, is itself a refutation of these extravagant assertions, and a sure promise that there can be no great difficulty in the way of thorough reconciliation. Science, on its part, grants to the matter of popular realism

the modes of extension as these have been noted above. Popular realism, on its part, must give up, in obedience to the demands of science, the supposed objectivity and severance from the mind of sounds and colors and all the sensations of the secondary qualities. This is, in brief, the essential. Any farther considerable reconstruction or "rationalization" of popular thought is not required by the precision and rigor of science, but only by the misconception and pretension of idealism.

From this let us go on, nearing the conclusion, to consider briefly the question of the comparative activity and passivity of the mind with special reference to the perception of matter. On this question, there have been two extreme views. The one makes the mind entirely passive or determined by objects; the other makes it entirely active, or the objects entirely determined by the mind. Kant favored the latter view in distinctly announcing that our perceptions are not conformed to objects, but objects to our perceptions, and in his fundamental idea of the relation of the intellect or understanding to "external sense."

This question is sometimes put and answered in the following manner: "How is mastery of the world of sense possible to thought if intelligence, in its very origin, is but the slave of the objects? And, conversely, How is agreement possible between intelligence and things, if the latter are to be determined according to the former? The solution of this problem, the highest in transcendental philosophy, is the answer to the question, How are we at once to think

intelligence as in subjection to objects, and objects as in subjection to intelligence? This it is impossible to think, unless the faculty which produced the objective world be originally identical with that which expresses itself in will; unless, therefore, the same faculty which in will is consciously productive, be in the production of the world, unconsciously productive." ¹ This is an answer of the Identitätslehre. A medium view is thus declared by Sir W. Hamilton: "In the apprehension of the primary qualities the mind is primarily and principally active; it feels only as it knows. In that of the Secondary, the mind is primarily and principally passive; it knows only as it feels. . . . [Foot Note.] The perception of parts out of parts is not given in the mere affection of colour, but is obtained by a reaction of the mind upon such affection. It is merely the recognition of a relation. But a relation is neither a passion nor a cause of passion; and, though apprehended through sense, is, in truth, an intellectual not a sensitive cognition; — unless under the name of sensitive cognition we comprehend, as I think we ought, more than the mere recognition of an organic passion." ²

The truth is neither entire activity nor entire passivity, but lies between these extremes. The great majority of psychologists have, in one form or another, conceded this; and there have been many curious attempts to divide what the mind produces from what it receives in perception, its action from its passion. In the cruder form of the Kantian theory

(1) Schwegler's *Hist. Philosophy*, Stirling tr., p. 205.

(2) Edition of *Reid's Works*, pp. 858, 859.

of perception, the mind is represented as actually receptive of elements from outer objects. In its finer form, the so-called "external sense" is a mode of the "internal sense"; and all the constituents that enter perceptions, those that are said to be passively received and those produced by the mind, are regarded as really subjective, as coming from different sources in the mind, the source of sense matter and the source of forms.

Sensations have above been regarded as excited in the mind by external objects; and the objects have been taken to be extended excitants or causes. But, on the other hand, sensations, having that intimate relation to the mind which is implied in the fact that they are modes of mind, can not, it is plain, be simply effects produced in the mind by external objects, but must stand in causal relation also to the mind itself to which they belong. It is then a primary question to determine how far sensations are effects of mind, and how far effects of external things; or how far the mind is their cause and how far external things are their causes.

Sensations and perceptions being pure modes of mind, unmixed with material or objective elements of any kind, must owe their existence, as to inner nature, constitution, content, entirely to the mind itself. The mind has its nature and inherent energies distinct from and independent of external things; and out of its original independent energies and materials it gives being to its perceptions. To this extent the mind is a cause, so far it is active, in perception. But it is not the whole or unqualified cause; its activity is not entirely uninfluenced and unregulated

by that of external causes, and the only activity to be taken account of. The mind is affected by external objects. Matter is not the dead inefficient substance Berkeley supposed it must be, if it exist, incapable of giving impulse to or exciting effects in mind. It is alive and potent with forces, and can transmit impulse to the mind. Now, in the production of sensations, the mind does not in general first move itself to produce; but is excited thereto by external objects. It is the origin of all that is produced; but the act of origination is initiated by the impulse of outer things, and not by the mind itself. It is the active cause of all, it provides all the constitutive elements; but it is yet passive and receptive in so far as that it receives excitation from external realities to produce. Further, not only is the mind excited to produce by external impulse, but it regulates its production in some degree of conformity to the external object. On occasion of excitation it does not, having received a start, produce sensations arbitrarily, irregularly, lawlessly, with no regard whatever to the exciting objects. Perception is not merely the reaction of the mind against outer excitants. It in some measure conforms to them. For example, as to duration, sensations in general begin and cease with the outer impulse. Sensations also conform in extension to impressing surfaces. Thus, while the mind is the sole origin of sensations, it is at the same time dependent for movement and regulation upon external objects. These objects are active or causal in the production, in that they excite to production and in some degree regulate it. Sensations owe all that belongs to them, material and form, to the mind; to external objects

they owe their occasion, and also the particular character of the form given them by the mind, as their particular duration and extension. So far is mind active and passive in perception; so far are external things active. So much perceptions owe to mind; so much to external realities.

But the special nature of the activity of mind in perception should be carefully considered. It is not properly creative activity. Sensations the mind truly produces, when affected by external objects; but the production is not consciously creative. It is the effect of the internal energies of the mind acting below the sphere of consciousness and the will. When the intellect begins the composition of the diverse sense materials into perceptions, its activity comes more within the sphere of consciousness; but there is no creation. The activity of the intellect in perception, as was remarked before, is only synthetic. It forms a greater unity out of smaller simple unities supplied to it; it constructs out of simple elements, consisting of indissoluble matter and form, notions of complex matter and form.

Before bringing this chapter to an end, we may with brevity fitly notice, as related to the question of activity and passivity, Mr. H. Spencer's theory, that perceptions are conformations of internal relations to external relations; the external relations being regarded as original, the internal as derivative. This theory stands at the opposite extreme from the Kantian theory of perception. As, according to the latter, perception makes external nature; so, according to the former, external nature makes perception.

Speaking of life, and of intelligence in general, including perception, Mr. Spencer says: "Life in all its manifestations, inclusive of Intelligence in its highest forms, consists in the adjustment of internal relations to external relations."¹ This vague and uncertain declaration seems to allow that there are internal relations or means of such relations, before adjustment to external relations takes place; that there is, to begin with, something internal, which is independent of, or coördinate in existence with, the external; that, if there were not something internal before adjustment began, it could not be supposed to begin. But this is apparently not the real or ultimate meaning. For a primary supposition of the theory is, that sensations, which are considered as the original materials or elements of intelligence, are "produced," that is "generated," by, or are the transformations and equivalents of, cerebral molecular motions. Hence, subjective relations are adjusted to objective relations, because the subjective terms (sensations) and their relations are generated by the objective. According to this theory, all activity in perception, at least all original activity, belongs to the external elements or objects singular and related.

There are indeed utterances in which Mr. Spencer seems to regard sensations as coördinate in originality and independency with the material motions. For instance, while holding that sensations are the transformations and equivalents of motions of matter, he holds that the latter are transformations and equivalents of sensations. None the less, it is clear that

(1) *First Principles*, p. 85.

he regards the motions of matter as the "original shapes,"¹ and sensations as the derivative. Again, he supposes that sensation is a face of the same event of which nervous motion is the other face, that they are "the inner and outer faces of the same change."² The term "faces" is properly applied to things or properties that are coördinate in existence or have equality as to origin and independence. But Mr. Spencer certainly does not admit such coördination or equality between sensation and nervous motion. To the latter he undoubtedly gives supremacy as the original and the cause. His application of the term "face" to sensation is therefore clearly a misuse of it. An effect can not be a face or side of its origin or cause. Further, Mr. Spencer asserts that nervous motion and sensation are entirely incomparable; that "we remain utterly incapable of seeing, even imagining, how the two are related";³ that "there is no conceivable community of nature" between them;⁴ that "no effort enables us to assimilate them,"⁵ etc.; notwithstanding these strong statements as to unlikeness, it is his general assumption that sensation is generated by nervous motion, that the only agent in its production is moving matter. Moreover, we find such declarations as this: "Manifestly, the establishment of correlation and equivalence between the forces of the outer and inner worlds, may be used to assimilate either to the other; according as we set out with one or the other term. But . . . neither of

(1) *First Principles*, p. 217, § 71.

(2) *Psychology*, I., p. 128.

(3) *Ib.*, I., p. 140.

(4) *Ib.*, I., p. 198.

(5) *Ib.*, I., p. 158.

these terms can be taken as ultimate." ¹ Notwithstanding such assertions, it is evidently a primary implication of Mr. Spencer's psychology that physical force or motion is the basis and cause of sensations; that sensations arise out of the movements of material particles and have no other origin and ground. An instance of this implication, or rather of express assertion, is the following: "An idea is the psychical side of what on its physical side is an involved set of molecular changes propagated through an involved set of nervous plexuses. That which makes possible this idea is the preëxistence of these plexuses, so organized that a wave of molecular motion diffused through them will produce, as its psychical correlative, the components of the conception in due form and degree. This idea lasts while the waves of molecular motion last, ceasing when they cease; but that which remains is the set of plexuses. These constitute the potentiality of the idea, and make possible future ideas like it." "The existence in the Subject of any other ideas than those which are passing is pure hypothesis absolutely without any evidence whatever." ² According to this, sensations or ideas are produced by the motion of nervous matter, and have their potentiality or possibility entirely in the nervous matter. No other agent than it, independent or coördinate, is recognized. The transitory ideas and the transitory motions have the same subject, the permanent nervous matter. All there is of mental or psychical are the passing sensations or ideas. These

(1) *First Principles*, p. 550.

(2) *Psychology*, II., p. 485 and p. 486.

have no distinct or coördinate permanent subject corresponding to the permanent material subject of the passing motions; they have their possibility or cause entirely in this same subject. From many such declarations it seems clear that it is of the fundamental teaching of Mr. Spencer, that the motions of material particles are the preëxistents, the originals, the causes, and sensations the sequents, the derivatives, the effects; that sensations and ideas have their potentiality or ground in permanent nervous matter alone, there being nothing mental that "remains" or is permanent. Mr. Spencer's theory of existence and knowledge is therefore evidently, in its primary conceptions, materialistic monism. The inconsistent employment of dualistic phraseology, however, often obscures its real character.

The doctrine that moving matter is the sole actor or agent in the generation of sensations, original elements of percepts, and of all internal relations, is opposed by at least one insuperable obstacle, viz.: the great and indisputable disparity between sensations and any conceivable mode of the motion of molecules. Sensation is a bright and shining light. Motion is change of place. We can not deny a very close relation of sensations with nervous matter and its motions: there is a quantitative equivalency between sensations and the motions, the intensity of the former corresponding to the force or vigor of the latter; there is unquestionable dependence of sensations upon the size, chemical composition, nutrition, waste, derangement of the brain; our sensibility would probably sleep forever, in our present conditions of existence, if it were not for the irritation of vibrating

matter. But such facts as these do not prove that molecular motion is the primary cause of sensation, or transforms itself into sensation; or that sensation has its sole ground or possibility in nervous matter. They only prove an intimate relation between motion and sensation,—the relation of occasion and occasioned, or of condition and conditioned. Physical forces or motions are transformable into one another, because of their homogeneity; but are not transformable into sensations, because there is not homogeneity.

We must suppose, because of the total unlikeness between sensations and molecular movements, and also because of the entrance of the former alone into consciousness and their priority in knowledge, that sensations are not generated by molecular movement, and that they have not their possibility or basis only in cerebral matter. Sensations and all modes of consciousness have a permanent subject as really as the passing external movements have a permanent subject; there is a permanent mind as really as a permanent cerebrum. The primary cause or agent in the production of sensations is the permanent mind; in it they have their permanent potentiality or fundamental possibility. This doctrine, nevertheless, admits adjustment or conformation between sensations and the cerebral molecular movements. The duration of sensations conforms to the duration of the movements; their intensity is proportionate to the force of the movements. But it is conformation between occasion and occasioned, not between primary cause and primary effect; between events that are entirely heterogeneous, and have their basis or

possibility in different and coördinate permanent entities, the cerebral and the mental.

Therefore, in the production of sensations, the mind is both passive and active. It is passive in that it is dependent upon external stimulation, and that its sensations are much conformed to the qualities of the external stimulants; but it is at the same time independent and active, as it contains in itself alone the permanent possibility of sensations and is the primary cause of their rise. Lotze justly says: "The physical event does not become a condition of the rise of the feeling until the sum of motions in which it consists meets with a subject which in its own nature has the peculiar capacity of producing feeling from itself." ¹ Again, he holds it as an essential conviction, "that a world of atoms and movements of atoms can never develop from itself a trace of mental life; that it forms, on the contrary, nothing more than a system of occasions, which win from another and unique basis the manifestation of an activity possible to that basis alone." ²

What has been affirmed as to the primacy of the mental foundation of sensations considered as original elements of percepts, or original terms of subjective relations, and as to the primacy of the mental agency in their rise, is true of the subjective relations themselves. There is certainly an adjustment between internal relations and external relations. Habitual internal relations correspond to constant external relations; percepts correspond in their duration, intensity, stability, extension, to external things;

(1) *Metaphysic*, p. 421.

(2) *Ib.*, p. 533.

but, as in the case of sensations, the adjustment is between occasion and occasioned, not between fundamental cause and effect. Habitual internal relations are no doubt occasioned by constant external relations; but at the same time they have their primary ground in the organization and unity of the mind. Mental habit is as real as cerebral habit or as confirmed lines and associations of cerebral motion. Mental habit has its deepest ground in the constitution and permanence of the mind and in the ability of the mind in some manner to preserve in itself results of its experience. In other words, there is an original union and degree of cohesion among the successive thoughts that constitute a habit, because of the unity of the mind, or because the thoughts are affections of the one mind. The higher degrees of the cohesion or force of a habit depend no doubt on the frequency of stimulation by outer related things; still the binding force belongs to the habit as mental; the mind in itself is capable of high degrees of cohesion among its states on occasion of repeated external stimulation; there are low and high degrees in pure mental cohesion. Accordingly, internal habits of succession and coexistence of thoughts can not be generated or created by external successions and coexistences, for the same reasons that thoughts themselves or their elements can not be generated by external agency. The mind possesses habits in itself; though it is trained in them by outer events. The primary ground of sensations or thoughts and their relations is in the mind. Therefore, in regard to internal relations, as in regard to the terms of these relations, the mind is both passive and active.

It is passive since and so far as it is dependent on external related occasions; but it is also independent and active, because it is the deepest ground of the relations and the chief cause of their appearance in consciousness.

In concluding this chapter, I remark, as regards the great question of the method of knowledge, that if there be truth in the foregoing views and reasoning, especially in the character ascribed to the intellect, and in the relation held to exist between sense and the other faculties of original matter and the intellect, our knowledge of external material things is the work of our ordinary mental faculties, and makes no requirement for any *a priori* regulative or formative principle conceived as ruling in the mind and creating experience. All the matter and form of the notions of these objects are given in the primary, individual, pre-intellectual affections of mind. The intellect taking these primary affections, especially the sensations, which give both matter and form in indissoluble union, synthesizes them into complex notions of matter and form, but synthesizes as to both matter and form only what is supplied to it by the primary simple modes of mind. The complex notions thus formed are phenomenally objectivized, especially by the eye. This objectivization requires no innate principle acting externally on or within the matter of sense and expanding it and expelling it from the mind. It is the effect of the clearly intelligible operation of our faculties, without the agency of any *a priori* propulsion, compulsion, or active principle. Our knowledge of the material world is based on two

primary facts given in the ordinary experience of the mind, viz.: the facts of subjective extension and subjective causation. By means of spatial extension and externality known within itself, and by means of the contrasts of its experiences of internal and reciprocal causation, the mind is excited and is able to pass in thought beyond its own limits, to cross the dark interval between itself and distant extended causes, and mediately to know or truly to represent them as respects their primary qualities. In this manner thought is drawn and moves out, without being projected from behind by any active innate principle which exists in the mind and originally apart from the primary experiential affections of mind.¹

(1) For a more detailed discussion of the perception of matter, with criticism of later theories, especially the English, the reader is referred to my previous work, *The Perception of Space and Matter*.

CHAPTER III.

COGNITION OF SPACE.

Space may be with advantage distinguished from extension, and extension from space. The term *space* may be well applied only to empty room; the term *extension*, to that quality of objects by which they fill space. The terms are used in most cases with this discrimination in this work. The distinction, however, it is evident is between things that are very peculiarly and very closely related. We have indeed already ascribed extension to space itself, because of its primary property of affording room for bodies and for motions.

The objectivity and independence of space has been implied in what has been said on the cognition of matter; but nothing could be more opposed to idealism than this implication. Space more than matter has been the real object of contention in the most thorough-going controversies between idealism and realism; and properly enough so, because it holds precedence of matter in being the container, while matter is the contained. Idealists have confidently supposed that certain characteristics belong to our notion of space which show it to be an *a priori* form of thought, having no corresponding outer reality; and that apparent objective space, and, in consequence, all its apparent contents, form an intelligible but not a real world. Kant avers that space is a

necessary representation, which can not be acquired through experience, but which precedes experience and makes it possible; that space has no real independent, distinct existence; that, considered as something different from a mode or condition of our sense-consciousness, it is nothing. "Our exposition," he says, "teaches accordingly the *reality* (*i. e.*, the objective validity) of space in regard to everything that can offer itself to us externally as object, but at the same time teaches the *ideality* of space in regard to things when they are considered through reason in themselves, *i. e.*, without respect to the nature of our sensibility. We affirm, therefore, the *empirical reality* of space (in regard to all possible external experience); although indeed we affirm the *transcendental reality* of the same, *i. e.*, that it is nothing, if we disregard the condition of the possibility of all experience and suppose space to be something on which things in themselves are dependent."¹

As to the nature of space regarded as an objective, independent reality, little need be said. Hardly anything can be said, because of its homogeneity and simplicity, which is not most self-evident from the first to every mind. Space is rightly defined as *empty room*; but the definition does not in any degree help the notion of space, or explicate anything not appearing most manifestly in the perceptions of every one. Space is as really a distinct primary mode or part of being as the matter which occupies comparatively small portions of it. As far as our perceptions go, we are as certain of space as of any material object

(1) *Kritik d. r. V.*, pp. 62, 63.

in it. I am as sure of the space between me and the wall of my room as I am of the wall itself. But what space is more than the independent, continuous and homogeneous tridimensional entity which we perceive it to be; what it is as to its inner texture, nature, or constitution; what it is besides mere emptiness; and what is the difference between the same space when filled and when void, seems beyond the power of the human mind ever to know. But the doctrine that space is not a distinct entity, but only a quality of entities, or a subjective condition of sensations, or, as Leibnitz held, the relation of entities, is an unintelligible and groundless view, and decidedly opposed by our clearest and leading perceptions.¹ We have before affirmed that space is a reality, because it is permanent and extended; but not a substance, because it is not active or does not exert force or resistance. And it should be maintained that the unity of the mind of man, and of the universe, and of God, must be in reconciliation with space as an extended and abiding reality. The unitary consciousness of God pervades illimitable space, as the consciousness of man pervades, at one instant, a color of small extent.

In considering the mode of attaining the notion of space, we shall confine attention here to the notion of finite space, leaving, in the main, the infinity of space and also the universality and necessity that pertain to our complete notion of space for future treatment.

(1) There have been some curious speculations regarding space of more than three dimensions.

Mr. H. Spencer, applying the same over-refined and arbitrary metaphysic to space as he applies to matter, enounces that space is unknowable or unthinkable. He bases this conclusion partly on the fact that we do not know whether the extent of space is infinite or absolute, and whether its divisibility is infinite or absolute. We certainly do not know the full extent and the extreme divisibility of space; but it is singular reasoning to argue that therefore space is unthinkable.

Our knowledge of space is, we must grant, only of the finite and relative or conditionally limited. But of finite and relative space we have a good and true knowledge. That same space which is assumed to exist but to be unknowable in its full extent, is surely knowable in its finite extent or finite portions. For example, we know the space which is, or which has been, occupied by a house and by many a smaller and many a larger body; the space of a cavern or a valley; the space within the clouds. Again, if we know not the limit of the divisibility of space or its ultimate subdivisions, we yet certainly know volumes or wholes which the conjectural inseparable subdivisions compose; as those just mentioned.¹ The knowledge we have of these portions, volumes, or spheres of objective space, is real, genuine knowledge. Our thought truly represents them as they exist.

(1) Sir W. Hamilton remarks: "Space is positively inconceivable:—as a whole, either infinitely unbounded, or absolutely bounded; as a part, either infinitely divisible, or absolutely indivisible. Space is positively conceivable:—as a mean between these extremes; in other words, we can think it either as an indefinite whole, or as an indefinite part." (*Discussions*, p. 572.)

Further, if our knowledge of space is only of the finite, yet this finite is of vast extent. The space of the solar system is intelligible. We easily understand that the earth revolves round the sun at a distance of about ninety-two millions of miles; and Neptune, at a distance of about twenty-eight hundred millions of miles. The mighty spheres of space within the orbits of these planets are certainly not picturable, but they are yet definitely thinkable and distinguishable by the aid of the mathematical symbols. As we have, then, what may be maintained to be true knowledge of divisions or spheres of space small and great, it seems very inconsiderate reasoning to conclude universally that, since we know not space to its uttermost bounds and to its uttermost divisibility, therefore we know nothing at all of space, space is unthinkable. Our knowledge of finite spheres and wholes of space (which is by most treated as if perfectly homogeneous) is true, and is very important. It is true and good as far as it goes; the real extension and the real duration of finite space are known. It is so important that we can and do get along very well with it alone, without the knowledge of the extreme extent and extreme divisibility of space. This latter knowledge would be no such advance upon our present knowledge of space, as to be alone worthy of the name knowledge, and as to require us to hold that our knowledge of finite and relative space is by itself no true knowledge.

Our knowledge of objective space is based primarily upon the same fundamental subjective conditions as our knowledge of objective material realities. Moreover, we pass from the cognition, and by

means of the cognition, of these realities to that of space; or from the cognition of filled space to that of empty space; and not reversely. True, afterwards we come to think and to be convinced that space is the necessary condition of the existence, or the container, of every extended object; but this experience regarding space is really subsequent to our cognition of an external material thing. That cognition is made without determination and regulation from this experience; is itself rather the occasion of the experience. Our first perception of a material object is, as was above remarked, somewhat like the involution or enfolding, by some simple water animals, of small floating objects that come in contact with their superficies. But if our perceptions of matter and empty space are thus successive as to initiation, they and the perception of motion doubtless grow to completeness together, each being much influenced by the others.

The thought of objective space first arises in the mind when some object, which has been clasped by the hand or by the hands and arms, is removed or escapes, and the grasping organs close without encountering resistance. The mind at once, or after brief experience of such contrasts, infers the existence of empty extension as holding the place of extended objects. The cognition of space thus comes primitively through the cognition of the absence of known extended and resisting entities: not by the action of space on us, since space has no force, but by our free, unresisted action or movement in it, in contrast with matter and movement resisted by matter; and thence our knowledge gradually widens and comprehends the surrounding sphere of space.

The muscular sense plays an important part here. By it the extent of spaces is in an important degree measured. It indicates the range of the movement of the finger and the arm. This power of muscular sensation (with which sensations of joint and tendon associate themselves) to measure range of movement or space soon becomes so complete that it seems to be original to the sensation. It is so regarded by some psychologists. But, contrary to this view, the muscular sensation (with associate motor sensations) does not possess originally the power to reveal or measure the movements of the locomotive organs. The power is a very early acquisition, but is not original. Muscular sensation acquires the power of spatial measurement primarily by association with touch. As the locomotive organs at first and involuntarily move over the tactile surface and strike different parts of it, exciting tactile sensations, the accompanying muscular sensations become able to indicate the extent of these movements by their association with the tactile sensations; which latter give, in themselves, originally, the consciousness of their own extension and the measure of their reciprocal externality, and originally measure the movements of the locomotive organs. Subsequently the motion of the arm over extra-corporeal bodies, and its free motion in empty space from one point to another, carry with them the cognition that the points are apart, and remain apart, on the ground of our previous knowledge of the movement of the hand over our superficies from one sensitive point to another; which movement is known as movement, because of our knowledge before and independently of the

movement, that the sensitive points of the tactual surface are really apart and so remaining. What is original to the tactile sensibility is thus by association acquired from it by the muscular sensibility accompanying movement. The knowledge of objective space therefore, like the knowledge of objective material things, depends primarily upon the experiential knowledge of extension and externality within the subjective sphere or the sphere of the mind.

But the tactual and muscular sensations combined can give of themselves the knowledge of only a very narrow extent of space. For the knowledge of large and distant space, we are dependent upon the ear and eye. A blind man forms the notion of extensive space by the varying strength and faintness of familiar sounds. But we are most indebted for our most extensive knowledge of space to the eye. By the coöperation of its retinal and muscular sensations, we make the cognition of a very great sphere of space. It must yet be borne in mind that, however far the ear, and especially the eye, may carry the cognition of space beyond the cognition possible to touch and the muscular sense (the muscular sense in organs other than the eye itself), these latter senses are still the basis of the perceptions of ear and eye. The eye is not able originally to cognize distance out, or the third dimension of space. The power to make this cognition is first derived, by association, from the tactual and muscular senses; but the eye develops its acquired power to a marvelous degree, in expanding, multiplying, and combining, in representation, the tactual and muscular experiences.

It might now be said regarding this theory of

the cognition of space, that it does not adequately account for our notion of the perfect continuity of space; that it may explain the perception of portions of space, but not the fact that we think of space as extending outward in all directions with absolute continuity, and are compelled so to think. What is the origin of this thought and compulsion? This brings before us the most important or the most famous point pertaining to the cognition of objective space. A large division of psychologists introduce here a "law of thought" or "principle of reason," and attribute to it the ability and necessity of thinking of space as in itself without voids or as perfectly continuous. This theory can be shown to be a gratuitous hypothesis. It is but an instance of the practice and potent tendency to refer the most remarkable and the most obscure acts and processes of thought to some extraordinary innate law. The necessity is in no such law; but in the experiential notion itself of an empty space gained in the manner above set forth.

Every perceivable or finite sphere of space must, by the very fact of its being known as finite, be known as having bounds, a limiting surface, so to speak. Our notion of such a sphere of space must have its corresponding limits. Now it is in these bounds or limits that the necessity of thinking of space as absolutely continuous exists. These bounds, facing outwards, imperatively demand, actually assume, space beyond themselves. The convex surface of any perceived space distinctly calls for an immediate concave surrounding space as its counterpart; and, in general, from the very contour and bounds of every cognizable

space, we find it impossible to think of it without thinking of the outlying space. These bounds, in themselves, directly demand exterior space, positively assume their association or continuity with it. On these grounds we necessarily think of space as perfectly continuous. The necessity is not in a "law of thought," but in our notion of finite spaces formed by the senses and experiential faculties. There is no necessity of thought before we get the perception of a finite space; but the perception of a finite space brings in itself, as an experiential perception, the necessity to think of space immediately beyond what it comprehends. Definitely to think of the bounds of any portion of space, small or great, is already to have passed those bounds,—to have passed them by the stimulus, or by occasion, of the bounds themselves.

It is not here supposed, and it can not be supposed, that the notion of the expansion and continuity of space arises with our very first perceptions of the dimensions of extensions and spaces. Our sensitive corporeal superficies has its fixed limits, and these limits demand, no doubt, in their nature, surrounding space. Our first perceptions of extension in it have their limits, and these limits in their nature declare their immediate relation to extension or space beyond; but still in our first perceptions, while there is certainly the consciousness of finiteness and bounds, this consciousness is not very distinct; the mind does not particularly notice or dwell upon the periphery or bounds of its sensations. A child may have a pretty clear and correct notion of the interior of the house and the grounds which are the narrow

scene of its life and movements, without thinking definitely of the boundaries of the scene or of anything beyond; though soon indeed the boundaries and the exterior may become the most vivid objects of his perceptions and feelings. The peasant who has never traveled beyond his home-district perceives its horizon; but his mind is occupied and filled mainly with the interior, with its relative objects and spaces. The horizon is a hazy region; he thinks but little of it and of what may be exterior. But another who has traveled abroad vividly and necessarily thinks of the regions surrounding his native place,—of it as being in unbroken continuity with them. So in our first perceptions of extension and space. Attention rests mainly upon the interior and its relative parts, and little upon the periphery or the superficies; but, gradually and rapidly, and especially because of the perception of varying and increasing extensions and spaces, thought fixes itself more upon their limits or bounds; and the more these are distinctly marked, the more forcibly do they impel thought to go beyond themselves, to assume immediate outlying space. The successive steps of our expanding notion of space make clear the thought of limits, bounds. Accordingly, while in our first experiences there is no distinct thought of spatial limits, and little or no disposition to think beyond them, attention soon fixes itself upon the limits; which, of themselves, occasion an irresistible movement of thought into space beyond themselves, and compel us to think of all space as room without any voids or gaps.

In the perception of space there is implied the correct measurement of it. We instantaneously com-

pare distances, and discern their real lengths. The standard of measurement is furnished from within the mind itself, from the sense of touch, as is the basal standard of all measurement. In the tactual sensation we have the consciousness of real extension, we have an absolute length; and just as the most complex and extensive system of geographical triangulation is constructed on a carefully measured base-line, so on this absolute length given by the tactual sense are based all external spatial measurements whatsoever. Though the tactual sense is very much confined in its sphere, and measures few and small distances immediately, yet by the visual and muscular senses, which easily represent and compound the tactual experiences and measurements, we can apply the absolute length and standard furnished by touch many times in any direction. By the imagination, we can apply the same standard farther, in the measurement of magnitudes greater than any that are perceptible; and by the symbols of mathematics, we can apply it farthest, in the measurement of magnitudes greater than any that are imaginable.

We may observe in general of the idea of space, that when once this idea has been acquired, it thereafter takes care of itself. It becomes clearer as to outlines and more exact as to internal positions and measurements; it works its own expansion, so to speak, indefinitely; and attains such a hold upon our thought that we can not get rid of it. This last necessity has its ultimate ground presumably in the extension of the mind itself.

Our notion of space is a perception or singular notion, and not a concept or general notion; although

there are undoubtedly general notions formed from the relations of spaces, as nearness, remoteness, and distance; and the term *space* is itself used to denote the concept formed from the cognitions of single spaces or the spaces occupied by single objects. That our notion of space is singular and not general, is a fundamental doctrine of Kant, lying at the basis of his distinction between the "forms" of sense and the "forms" of the understanding. "Space," he affirms, "is not a discursive or, as we say, general notion of the relations of things, but a pure perception. For, in the first place, we can represent to ourselves only one single space, and when we speak of many spaces, we mean only parts of one and the same single space. These parts also can not precede the single all-comprehending space as if they were its constituent parts (from which its composition is possible), but are only thought in it. Space is essentially one; the manifold in it, consequently also the general notion of spaces, rests wholly on limitations."¹ Space is a continuous, homogeneous, indivisible, all-comprehending reality, and is therefore the object of an individual notion; but in admitting of ideal divisions or portionings, or in containing parts, though parts which are not separable, it gives the materials, as was just observed, for general notions.

In conclusion, I remark in general of space, that it is revealed by our perceptive faculties as an objective reality, distinct from and independent of matter; and as constituting, with as much certainty as matter, a primary mode of being. Matter we know as an

(1) *Kritik d. r. V.*, p. 59.

extended and resisting entity. Space we know as an extended and unresisting entity. It is not merely a form of thought, nor a compound of sensations, nor a relation or attribute of things, but a distinct reality. Our thought of space, as far as that thought goes, is truly representative of it (especially of its extension) as it exists.

Because of its own peculiar nature as an objective reality, space holds a much greater power over thought than does matter. Having acquired the notion of material realities, we can think them away; but we can not think space away, while supposing, or not supposing, that material realities remain. We can not think space away at all. When once perceived, it persists in thought as it persists in existence.

CHAPTER IV.

COGNITION OF OBJECTIVE TIME.

The nature and cognition of Time are commonly discussed in association with the nature and cognition of Space. This association is often a consequence of the assumption that space and time are coördinate and somewhat similar realities. Those who make space a form of thought or an abstract notion, make time the same; those who make space an entity existing for itself, make time the same; and in most discussions of them, they are frequently joined as a couplet in the expression "space and time."

The assumption of likeness, in nature and order, between space and time appears to be one of the greatest errors. There are, it is true, certain characteristics which are peculiar to the two and our notions of them, and which have been partly the occasion of the customary coördination of them, and association in discussion; but there is yet a fundamental difference in nature between space and time, which forbids their coördination, and requires separation in treatment. Space is a portion of being, a distinct reality, as truly as mind and matter. It exists in itself. It is independent of the things that occupy it, of the mind that knows it. When a solid is moved from one space into another, the space which was first occupied remains after being emptied of the solid. There is no difficulty in seeing that it remains, and can remain even if the solid and all other solids were annihilated. Time, on the other hand, is not a por-

tion of being or a separate entity, like space, mind and matter; it is not a distinct something in which events happen, as space is a distinct something in which objects have place; but is simply and solely a property of being, viz.: the duration of being. Time adds nothing to, is nothing in the sum of being; but is only the endurance of the elements, parts, and sum of being. I have called it a property; but it is a property *sui generis*, having nothing like it.

The doctrine here presented, that time is only a property of entities, and not a distinct entity like space, will be stoutly opposed by some who claim that we certainly, indeed necessarily, think of time as an independent reality, as that in which events and objects have their succession and duration, just as space is that in which objects have their extension and position; that, when we think of any object as enduring, we think of time independent of the object's duration, within which it has its duration—of which its duration fills a part.

It can not be denied that the duration of objects and successions or events appears to have existence in a time distinct from them, which would exist if they did not exist, which is above and inclusive or independent of them. But when these phenomena are critically considered, they are all found to amount only to this,—that the duration of one event or object is seen and measured in and by the duration of another. What we indistinctly and confusedly take for a time inclusive and independent of the duration of ourselves or of anything, is simply the duration of some other thing or of the mass or system of surrounding things, which we in a manner detach

from the things and consider as if an independent reality. Thus we estimate the time of a short event in the time of a long one; of a short series in the time of longer and more complex ones; of a single event or object in that of the rest of the system to which it belongs, or of the surrounding. Just as a material object forms but a small part of the material universe and is inclosed within it, so its duration or the duration of its changes is inclosed within the duration of its system; and apparent independent time is only the time of the system.

The reading of the duration of one thing thus in the duration of another or others as its background, follows a regular retrogression. For example, an event in the life of an individual is thought of as having its duration within the time of old or permanent objects around, as buildings, and the natural scenery, fields, hills, valleys; these latter objects as having their duration in that of the earth; the earth in that of the material universe; and the material universe in that of unchanging space. Sir Isaac Newton went one step farther back,—“*Deus durat semper et adest ubique, et, existendo semper et ubique, durationem et spatium constituit.*” But we may hesitate to follow Sir Isaac in this final assumption; for it carries us back to a point where thought ceases to be clear and certain and becomes confounded. The particularity of the relation of the Creator to space seems to be beyond the power of the human mind to determine. We may believe that he “fills immensity,” that he is omnipresent, that he is the creator of space, and therefore, unlike all other beings, independent of it; but yet how he can be the creator of space and

space be not his attribute, if it be not his attribute, or how he can be in or pervade space and not dependent upon and subsequent to it, are problems insoluble by the mind of man. Therefore, whether the Creator by existing everywhere constitutes space in a sense in which he does not constitute matter and spirits, we can not tell. Space exists always and everywhere, embracing all things; and as we go back from the duration of one thing to that of another thing or of a system older and more comprehensive, we come to the duration of space last, and in all our ordinary experience it is the ultimate or comprehensive duration. Time appears distinct and all-embracing because it is the attribute of distinct and all-embracing space. There is no ground for assuming that it is itself a distinct portion or division of being, and that it would remain as a pure void entity, if space and all its contents, or all enduring things, were annihilated.

The close relation between space and time as entity and property, and their close and constant relation in our experience, account for the custom of applying the language of space to time, and the language of time to space; and for the use of terms which apparently belong to both, without either having precedence. We speak of distance as so many hours, *Stunden*. In endeavoring to convey a notion of the distance of the fixed stars, astronomers show how long a time is required for light to travel from them to us. On the other hand, the terms of space are applied to time: "All with one voice about the space of two hours cried out." The language of the clock, as, for example, half-past two, etc., is rather that of space or extension, calling up immediately the

position of the pointers on the dial. This interchange of language has been supposed by some to indicate that space and time are coördinate realities; by others, that the notion of space is derived from the notion of time. It indicates neither, but is wholly the result of the intimate relation above pointed out between space and time, or between the two properties of space,—capacity to contain extended things, and duration. Further, it is perfectly clear that when such common terms as *length*, *continuous*, *part*, *contain*, are used with reference to space and time, they have wholly different meanings. It is easily seen that length in space and length in time, or length in the capacity and length in the duration of space, are the most different qualities. Both are continuous and indivisible into separable parts; but it is manifest that *continuous* and *part* mean very different characteristics as applied to the two; and so of *distance*, in Locke's definition of duration as "perishing distance," and of space as "lasting distance." For philosophers, then, to define time as extension in one dimension, length, and space as extension in three dimensions, length, breadth, and depth, without recognition of the fundamental difference between the extensions in the two cases, is a gross confounding of one of the clearest, firmest, and most original distinctions. Time being the property of space, is as omnipresent, universal, all-embracing, as space; and the interchange of language is perfectly natural, on the basis of this intimate and universal relation and the constant perception of it, without proving either duality or identity. The entity is spoken of in terms of its property; and the property is spoken of in terms of its entity; as it often happens

between quality and object, and between object and object, as is shown by the figures of speech.

Duration, simultaneity, and succession have been called the modes of time. They can be defined by terms different from their names, but not by any that are plainer or more express. Duration is the more general term, being applicable to individuals and pluralities, and means simply continued existence. Duration is therefore hardly a mode of time, but is identical with it. Simultaneity and succession may be called modes of time, and always imply a plurality. Objects or events concurrent in duration are simultaneous. Events occurring with time intervals between them are successive. We cognize the succession of events only through the cognition of something that has unbroken duration.

Time being a universal quality, is both mental and extra-mental, or truly subjective and objective. In this respect it is like extension considered as the property of objects by which they fill space. Time, like extension, is both subjective and objective with equal reality. The subjective is not in either case derived from the objective; the objective is not a projection, or in any way a product, of the subjective, but is only cognized through the subjective. Duration is distinctly the property of subject and object, as subject and object are distinct realities.

The cognition of objective time, or the time of external things, we have especially to consider now. The cognition of subjective time, or the time of the mind and its phenomena, has been already treated of in our discussion of the cognition of real mind and of the characteristics of the sensations and other phe-

nomena. Whatever has been said of memory has been a discussion so far of subjective time. The mind knows itself as enduring; in other words, it knows its self-identity. How it can know its own time, how it can retain in the unity of thought the successive stages of its own existence, is an inexplicable fact, like the rise of consciousness and sensation. The mind's memory of itself is a combination of knowledge and conviction, which must just be taken as it comes to us, as a primary fact of mind. Not only sensations, but all the primary phenomena of mind give alike originally the knowledge of time. Time is a form of all affections, because it is a real attribute of these affections; and it is a real attribute of all affections, not as the affections of a timeless mind, but because time is an attribute of real mind. What is a real form or attribute of the thinker expresses itself as an attribute of his thought.

The cognition of mental duration is our first and most direct knowledge of time; and is the necessary basis of the cognition of the time of any single thing and of all things distinct from and external to the mind. The time of external things is just as real as the time of the mind, but it can be known only by means of the time of the mind. "It is to me very clear," says Locke, "that men derive their ideas of duration from their reflections on the train of the ideas they observe to succeed one another in their own understandings, without which observation they can have no notion of duration, whatever may happen in the world."¹ In this, as was noted before, time is like extension. The extension of the mind and

(1) *Essay*, II., xiv. 4.

the extension of external things are equally real; but the objective extension is known only mediately by the subjective. Both time and extension are internal and external; and in both cases the external is cognized only representatively by means of the internal.

Having, then, within the mind the direct knowledge of time, we are able by means of it to cognize the duration of all other cognizable things. We first perceive the duration of an external object by the duration of the sensation or sensations which we know it excites in the mind. This experience is our primary perception of external duration and the basis of our complete knowledge of it. Soon in the course of experience we come to think of external things as enduring between two successive excitations of the mind. This attribution of duration to an object between two similar sensations, while the sensations do not endure, has its basis and motive in the knowledge that the mind endures between the sense-excitations. The mind knowing its own permanency between the occurrences of its similar and successive affections, whether the interval be short or long, infers the like permanency of the external excitant of the affections.

These considerations are perhaps sufficient regarding the cognition of the duration of outer things through the period of our cognitive life. But we can think of and correctly measure the duration of things that preceded and that will follow our personal life,—a duration many times longer than life; indeed, we are under an apparent necessity to think of such duration. There is a marked progression in our cognition and representation of time. Beginning

with the cognition of the duration and succession of the mental affections and of near events, it advances to the clear knowledge that many surrounding, concurrent things began their existence long before our life; that the events of the present are but terms of series which run very far back into the past. The imagination becomes able to reach very far back and very far forward from the present moment, comprehending a stretch of duration many times longer than that of experience; and when imagination fails, we can still speak of and consider a duration very many times longer than its utmost representation.

This is the work of the intellect in its strict character as a purely synthetic, and not originaive, faculty. Taking our simple cognition of any period of personal experience, the intellect can expand or multiply it, and so form in a moment a complex notion of duration, or the notion of a much longer individual duration. Thus a person who has a clear memory of the duration of a building or any prominent object for ten years, can in imagination prefix ten years to the beginning of his memory and affix ten years to the present; and in this manner form the notion of the duration of the object through a period of thirty years. The intellect acts here only in its proper character as a synthetic power. It supplies no matter and no form to the notion of the longer time; but in all such cases only multiplies what is furnished it in the simple cognition of a limited period, or of the whole, of remembered personal life. In this way the imagination can construct the notion of a great historical period, as the whole life of an empire, though the notion may be dim. Furthermore, as was

just remarked, the mind does not need to stop, and does not stop, its consideration of duration with the comprehensive representations of the imagination. It can treat of a duration much longer than any that can ever be imagined. The means of doing this is the same as that of the measurement of great spaces, viz.: arithmetical symbols and numeration. Supported by the clear knowledge of these symbols and by the clear knowledge of their relation, as determined by the decimal law, any mind of moderate discipline can follow the geologist appreciatively to the length of his supreme estimates of prehistoric time. Mathematical numeration, taking the six decades of the longest memory for its original basis and material, or some compound standard made from them, enables us to treat intelligently of a period of time as many numbers longer than the period of history, as the period of history is longer than the life of a man, or than a day, or even an hour.

Some might now say that, if there be nothing impossible in the intellect, regarded as purely synthetic, forming a comprehensive representation of, or handling by symbols, long duration, there seems something extraordinary in its start or tendency to do so, or, indeed, in any thought of duration, short or long, before or after personal experience. If it be granted that the intellect, taken as constructive only, and not as a repository or agent of an *a priori* regulative principle that supplies original matter or forms, or both, to thought, could from the primary, pre-intellectual experiences of duration form a notion of duration many times longer than the longest personal experience, provided it were already impelled

or started to do so; yet this impulse or starting seems, they say, to require an *a priori* cognitive principle necessitating the leaping of thought beyond experience, *ante* and *post*.

We must admit regarding time that there is a peculiar necessity in thought to go beyond our personal experience, just as we have admitted a like necessity in the thought of space to go beyond the sphere of immediate experience. But there is no reason in the case of time, as there is none in the case of space, to assume the existence of a primary subjective compelling principle. The necessity is in the experiential notion of time itself. The temporal limits of our experience, the very bounds of our simple notions of personal duration, in themselves impel thought beyond themselves. This compulsion arises gradually, but very early in life. We soon come to be clearly cognizant of the advances of our experience; to compare the stages as to duration, and also as to qualitative differences; to mark distinctly the points of juncture and transition or change; and, as we become habituated to think of stages of duration as bounded by one another, or as antecedent, consequent, and intermediary, the limits, or the beginning and end, of our whole or collective experience call up the thought of time beyond them, and we are impotent to prevent it. From the thought of the relation of the successive periods of duration to our whole experience of duration, we pass to the thought of duration beyond our whole experience of it. But the necessity is not *a priori*. It is entirely in the notion of the temporal bounds of our experience, which have become clear and marked through the

progression and varying character of the stages of our experience. These very bounds themselves raise irresistibly the thought of duration before and after them.

Here we explicitly reaffirm a general principle which we have already contended for; namely, that the elementary materials of all time-intellection are themselves not timeless, but temporal. They are short times, the thought of which is temporal, or the thoughts of which are as long as the times themselves. By intellection we can think in an instant of a very long time, of a time infinitely longer than the time of our thinking of it, because of our primary experiences of times in which the thought is as long as the time thought of. The perception of time can not be itself timeless or based on or created from timelessness: just as the perception of extension can not be itself extensionless or based on or created from inextension. In time-knowledge there is extraordinary construction or composition: but no creation. Further, the temporal and the timeless are not known only in contrast with one another; though succession and permanence are so known.

The measurement of time is an inseparable part of the cognition of time; and as our primary knowledge of time is of subjective time, so the original fundamental, standard or measure of time is subjective. The philosophy of the exact measurement of time is a little complex, but it is not obscure and uncertain.

Some have contended that the mind does not furnish a uniform measure of time; that experiences of the same real duration appear of different lengths,

according as they differ in pleasurable or painfulness; that a time which is long to a youth seems short to an old man; that different species of animals must vary in their estimate of the same duration. That there are variations in the measurement or estimation of the same real duration must be granted; but these variations, like supposed corresponding variations in regard to extension, have been by some greatly exaggerated in the interests of skepticism and towards the confusion of science.

All must allow that ordinarily, and especially when correctness is desired, we do not measure time, hours, days, by immediately referring to the memory of our successive affections or the intervals between them; but rather to objective mechanical measurers or time-keepers, the clock, etc. A person may wish to read or work a certain time. He does not determine the lapse of the time by direct reference to the remembered series of his thoughts, but rather by his watch. This custom can owe its rise only to the difficulty of accurately measuring the duration of events by the pure temporal succession of our mental affections.

All mechanical contrivances for the measurement of time are but different modes in which the mind brings its measurement of extension to the aid of its measurement of time. Experiences of time and of extension combine themselves in experiences of motion; and our common instrumental estimation of time is the comparing and combining of identical or equal movements, or equal movements of the same mass. The very close union of the idea of time and the idea of extension in the idea of motion, makes it easy to use extension in aid of the estimation of time.

In motion we can be more certain or more quickly cognizant of equal spaces than of equal times; and the cognition of the former helps in that of the latter.

The attachment of the pendulum to clock-work by Huyghens is the greatest invention for the exact measurement of time. Galileo had previously endeavored to make the attachment, having observed the equality in the vibrations of a pendulum or suspended body. By the movement of the pointers over the dial, which is regulated and coexistent with that of the pendulum, we commonly measure time.

The vibrations of the pendulum are, however, themselves originally observed to be of equal duration, by close attention to the succession of the uniform retinal sensations excited by them. These vibrations are perceived to extend through the same space and endure the same time. But now, by a curious turn of thought, the objective vibrations, the duration of which is originally cognized by the duration of the retinal sensations that they excite, come to be taken as the measure of the succession and duration of the sensations themselves, and mediately through the sensations of all affections of the mind. Furthermore, the movement of the pendulum, or the movement of the pointers regulated by it, is known to be continuous in our absence; and we therefore accept this movement as the measure of our absence, of our very varying experiences in our absence.

The order of sequence in the measurement of the duration of our subjective experiences, by objective motion, should be carefully noted. The unvarying objective motion is first accepted as the measurer of the duration of simple unvarying subjective experi-

ences, viz.: series of like sensations directly excited by it. Having been accepted and confirmed to some extent as a measurer of subjective successions, in measurement of successions of like affections, it is then gradually taken as the true measurer of successions of the most diverse affections and experiences. On the ground of some previous original patient observation of series of like sensations, we are enabled to take the objective unvarying motions that excite the like sensations as the measure of the duration of any series of unlike mental affections; are enabled to measure the duration of any series of the most dissimilar events by a glance at the face of a clock, which measurement would otherwise require a painful effort of introspection, and could not be done as accurately by any degree of effort.

The transference, so to speak, by the mind of its original possession and right to measure time, from itself to external things, is one of the most remarkable facts of experience. To the causes of it must be added our strong conviction of the existence, great extension, great duration, and great forces of the external world. Long periods of time are measured by the regular apparent movements of the heavenly bodies; and we easily observe the correspondence between our ordinary artificial time-keepers and them. But all measurement of time, long and short, by external movement, rests ultimately on the measurement by introspection of the duration of series of like mental affections, indifferent as to pleasure and pain, and therefore not disturbing, by their complexity, the estimation of the absolute durations of the series. The cognition of the duration of series

of similar and indifferent sensations, is the foundation of our cognition of the duration of all mental series and the duration of all things.

Our notion of time, like that of space, is a singular and not a general notion, although we form general notions from relations in time, as succession, simultaneity, lateness, etc. Time is continuous, without separable parts; it is a universal property,—universal not only because it belongs to every portion or element of being, but because it belongs to all being taken as a unit; and our notion of it is therefore singular. But from our ideas of its inseparable parts we form general notions.

The cognition of number has been by many made to depend upon the notion of succession or time and upon memory. No doubt our primary notions of number are in many cases derived from succession, being the numerations of series of successive mental affections; but not always. For the mind is capable of cognizing, and often does cognize, a simultaneous series of affections as easily as a successive series. Touch and the eye can instantaneously perceive, without motion, a number of distinct impressions, or of distinct points in the same impression. In every comparison we are simultaneously conscious of at least two ideas. We may therefore acquire our notions of at least small numbers as well from series of simultaneous affections as from series of successive. Through inattention to the reality and importance of spatial and simultaneous series of units, psychologists have endeavored to maintain a too rigid distinction between geometry and arithmetic, in making the former a space-science and the latter a time-science.

CHAPTER V.

COGNITION OF MOTION.

The idea of motion involves three elementary ideas, namely, the idea of space or extension, the idea of time, and the idea of identity. We apprehend motion where the same object successively occupies different places. Or, motion may be defined as the same object's successively occupying different places.

Motion is often enumerated among the primary qualities of matter. But it can not be properly ranked with extension. It is not as necessary to the thought of matter as extension. Extension and motion equally require the existence of space; but while every material object or mass must be thought to be extended, it must not be thought to move.

Our first knowledge of motion is of motion within the limits of the mind and its sense organs. It may be derived from the movement of our locomotive organs over our sensitive superficies; as, for example, the movement of the finger over the palm of the hand or over a portion of the face or breast. Take the case of the movement of a right-hand finger over the left-hand palm. It affords the conditions necessary for the cognition of motion; which conditions are the extended sensitive surface of the palm, the sensitive point of the finger, and the muscular sensations attending the motion of the arm. Our original idea

of motion, as was remarked above, implies the ideas of extension, succession and identity. From the conditions of the idea of motion just named, the ideas of extension, succession, and the identity of the sensitive moving organ, may be derived previously to that of motion. The idea of extension may be gained by any preceding excitation of the extended sensibility of the palm. The idea of succession, by any repeated impression on the point of the finger, when not moving, or by any series of muscular sensations excited by the free but undiscerned movement of the arm. We are cognizant of the identity of the sensitive point of the finger, just as we are cognizant of the identity of the mind or any of its powers. Being thus already in possession of the knowledge of different places in the surface of the palm, and of the succession of sensations at the point of the finger, and of the identity of this point or sensibility, we apprehend, when the finger is moved over the palm, that this identical sensitive point has successively touched spatially separated points of the palm; that is, we apprehend that the same object has touched in succession at different places, or, in other words, we apprehend change of place, which is motion.

Some psychologists seem to hold that when successive sensations are produced at different points of any tract of the superficies by a foreign body or a body not under our own control, the knowledge of motion is involved, and involved from the first. This view is questionable. The experience of such successive and separate sensations might include only the notions of succession and difference of place, and not that of motion. A similar series of sensations

might be excited by different momentarily stable objects. We originally cognize motion only when we perceive that spatially separate sensations are successively occasioned by the same identical object. Our perception is not only successively of different places, but of some one thing as successively at different places. From this we may conclude that motion is not an original perception by the retinal sensations. A series of sensations produced across the retina gives of itself and at first only the notions of succession and extension or difference of places, but not of motion.

On the basis of the original idea of motion acquired in such a manner as above indicated, are constructed all the notions we ever attain of the number and vast extent of motions. The idea of motion beyond the body, over other bodies and through empty space, and of motion of almost infinitely greater extent than the body's, is possible by the same intellectual faculty by which we cognize, from the narrow basis of sense-extension, vast external magnitudes and vast volumes of space; and cognize, from the narrow limits of our personal duration, great periods of time. The knowledge of external motion and the knowledge of space indeed move together, or are parts of the same complex intellectual operation. We easily advance to the idea and measure of the motion of our organs in space, free from contact with our tactual surface, because the motor sensations, by their previous association with the sensations of the extended tactual surface, in the original acquisition of the idea of motion, as above explained, become a measure of space and motion. Originally known as

a time series, the muscular sensations accompanying movement acquire, by association with sensations spatially separated, the power to reveal and measure, by themselves, extension, motion, and space. With this beginning, and with the aid of the representation and synthesis of the other senses, the cognition of the greatest and longest enduring motions is no more difficult and no less intelligible than the attainment of our notions of the longest times.

Our knowledge of motion may include the knowledge of absolute extent of motion and of absolute rate, just as our knowledge of extension and space may be of absolute portions; and it may do this without including or requiring the knowledge of absolute place and absolute direction. A rolling stone or a locomotive has the motion of the earth, and a motion relative to the earth. This latter motion we may consider apart and alone, and determine its absolute rate and extent.

In our discussion of the ideas of extension, space, time and motion, we have followed a certain order; but this is not to be taken as assuming that any one of these ideas reaches completeness before we can attain another of them. While there are real differences in the order of their generation or rise, especially of the ideas of extension, motion, and space, yet, like the children of the same family, they grow up in close association, with mutual influence, to full character.

CHAPTER VI.

COGNITION OF OBJECTIVE CAUSATION.

The causal relation is universal; it exists within the mind, between the mind and external things, and among external things. The last of these three spheres is the special field of our present inquiry; that is, we have particularly to consider the nature and rise of the idea of external causation. But a satisfactory treatment of external causation will require us to give some attention to the causal relation in the two other cases. Already in the chapters on the Cognition of Real Mind and the Cognition of the External, there has been some discussion of causation within the mind and between the mind and outer things. One of the main characteristics which we perceive to belong to the mind as a substance, is causation, or a measure of power to excite and control its own states. External perception, as was remarked, is, in its ultimate character, an instance, and a most important instance, of the cognition of causation; for we perceive the existence of external things only by perceiving them as extended causes or excitants of our sensations.

In all discussion of causation, the first thing to be considered is the question, What is the nature of our idea of causation? On the answer to this question there is a very serious division among psychologists. Some hold that the idea of causation is the idea of power conjoined with the idea of pure temporal succession. A cause is that which precedes

and, by its force, power or endeavor, occasions the rise of an event. That event is an effect. Others contend that the idea of causation is that of uniform or invariable pure temporal succession. A cause is an invariable antecedent. An effect is an invariable consequent. Power or energy in the cause giving rise to the effect, is absolutely denied. This, as is well known, is the doctrine ingeniously advocated by Hume; and it has been accepted and propagated by able thinkers since.

The whole controversy turns on the question of power. Now Hume, making a confident appeal to experience, emphatically denies that any instance of succession can be pointed out where there is the least evidence of power in the antecedent or so-called cause to produce the consequent or effect. First he denies it of events, or cause and effect, external to the mind. "When we look about us," he says, "towards external objects, and consider the operation of causes, we are never able in a single instance to discover any power or necessary connection; any quality which binds the effect to the cause, and renders the one an infallible consequence of the other. We only find that the one does actually in fact follow the other. The impulse of one billiard-ball is attended with motion in the second. This is the whole that appears to the *outward* senses. The mind feels no sentiment or *inward* impression from this succession of objects: consequently there is not, in any single particular instance of cause and effect, anything which can suggest the idea of power or necessary connection."¹

(1) *Philosophical Works*, IV., p. 72.

Secondly, he denies it of cases where the cause is internal or mental, our volition, and the effect external; as in our movement of the bodily organs or extra-corporeal objects in contact with them. Regarding these he says: "We may therefore conclude from the whole, I hope, without any temerity, though with assurance, that our idea of power is not copied from any sentiment or consciousness of power within ourselves, when we give rise to animal motion, or apply our limbs to their proper use and office. That their motion follows the command of the will is a matter of common experience, like other natural events; but the power or energy by which this is effected, like that in the other natural events, is unknown and inconceivable."¹

Thirdly, in equally express and positive terms he denies the existence of power within the mind, where cause and effect are both mental; as in the mind's excitation and command of its own states and operations. He remarks: "The uniting principle among our internal perceptions is as unintelligible as that among external objects."²

But though Hume thus rejects the existence of power in every instance of causation or succession, he yet admits in a manner the existence of the idea of power. But he positively regards it as a delusion, as a "vulgar, inaccurate idea,"³ having nothing real corresponding to it. He says comprehensively: "As we can have no idea of anything which never appeared to our outward sense or inward sentiment, the necessary conclusion *seems* to be, that we have

(1) *Phil. Works*, IV., pp. 76, 77. (2) *Ib.*, I., pp. 216, 217.

(3) *Ib.*, IV., p. 77.

no idea of connection or power at all, and that these words are absolutely without any meaning, when employed either in philosophical reasonings or common life."¹

As the result of all, Hume resolves the idea of causation or power into that of customary or uniform succession. "The idea of power is really only the idea of a characteristic by which a number of uniform successions differ from a single succession, *i. e.*, their uniformity. In other words, the only thing not vulgar and delusive answering to the idea of power is the tendency acquired by the mind, in connection with a customary succession, of thinking of the customary antecedent, when the consequent appears, or of the customary consequent, when the antecedent appears. "After a repetition of similar instances, the mind is carried by habit, upon the appearance of one event, to expect its usual attendant, and to believe that it will exist. This connection, therefore, which we *feel* in the mind, this customary transition of the imagination from one object to its usual attendant, is the sentiment or impression, from which we form the idea of power or necessary connection. Nothing further is in the case."² "In all single instances of the operation of bodies or minds, there is nothing that produces any impression, nor consequently can suggest any idea, of power or necessary connection. But when many uniform instances appear, and the same object is always followed by the same event, we then begin to entertain the notion of cause and connection. We then *feel* a new sentiment or impression, to-wit, a customary connection in the thought or imagina-

(1) *Phil. Works*, IV., p. 84.

(2) *Ib.*, IV., p. 86.

tion between one object and its usual attendant; and this sentiment is the original of that idea which we seek for. For as this idea arises from a number of similar instances, and not from any single instance, it must arise from that circumstance in which the number of instances differ from every individual instance. But this customary connection or transition of the imagination is the only circumstance in which they differ. In every other particular they are alike."¹

Hume's denial of the existence of the idea of power, or what is the same thing, his identification of it with the idea of customary succession, is a clear misrepresentation of the phenomenon. In very many cases of succession, there is, beyond question, the idea and belief of power or endeavor in the antecedent to produce or occasion the consequent. The play of thought or memory between the antecedent and consequent of a uniform pure succession, no matter how facile and sure it may be, from frequent repetition, is seen by every one to be an essentially different fact. In our voluntary movement of the bodily organs we are distinctly conscious of the mental endeavor to produce the movement. We are at least as distinctly cognizant of the effort as of the succession. Again, when one billiard-ball (to use Hume's favorite illustration) strikes upon another and moves it, we have the distinct idea of force existing in the former by which it occasions the movement of the latter,—of force communicated to the former first by the player who drove it with his cue. We must yet of course grant that, if this idea is to be accepted with regard and confidence, its rise must

(1) *Phil. Works*, IV., p. 80.

be accounted for; but still it is there in the greatest distinctness. Its existence in the mind distinguished from the idea of pure succession, whether single or uniform and repeated, is as certain as any fact of the mind; and it is sheer violence to deny it. Whether its rise be explicable or not, its existence must be granted. We distinctly think of causation as the union of succession and productive power. Hume accounts for the idea of power by degrading its character and by denying its existence. In the discussion of no other subject are his fondness for paradox and his profession of skeptic so apparent and bold. His own words are here true to his own spirit: "No conclusions can be more agreeable to skepticism than such as make discoveries concerning the weakness and narrow limits of human reason and capacity."¹

With so much concerning the nature of the idea of causation or power, let us turn to consider more fully the question of its origin. It is no insignificant merit of Hume that he rigorously holds the question of the nature and the origin of the notion of power to the decision of experience. It is his chief fault that he greatly misrepresents the decision which experience gives.

First, some remarks as to how the idea of power does not originate. It does not originate with the perception of the action of external objects upon one another, or of the changes among them. Hume's reasoning on this point, as already quoted, is conclusive. "The impulse of one billiard-ball is attended with motion in the second. This is the whole that appears to the *outward* senses. The mind feels no

(1) *Phil. Works*, IV., p. 86.

sentiment or *inward* impression from this succession of objects: consequently there is not, in any single particular instance of [external] cause and effect, anything which can suggest the idea of power or necessary connection." True, all that appears to the senses are the two balls in contact and the consequent movements. No power or "necessary connection" is discovered between them. No transeunt energy is seen to pass from one to the other. As far as external successions taken alone are concerned (if indeed it is possible to take them alone), we should have no sufficient reason to assume that there is anything more than what appears to the sense, viz.: pure succession, or pure antecedent and consequent; that there is any power in addition to the pure succession. There is nothing in these external events considered in themselves to occasion or start the thought of power or efficient antecedent. But while this is true, it yet must be granted as equally true that we have the full notion of causation in connection with the perception of external relations. When one billiard-ball strikes and moves another, we always think that there is some energy in the first which produces the movement of the second. We do not think of the two phenomena as purely successive, as mere antecedent and consequent; but certainly think of power as present in the one ball giving it influence over the other, making its motion an efficient antecedent. Though it can not be affirmed that the idea of power originates with these phenomena, it can not be reasonably denied that it occurs with them.

The question then arises, Whence do we derive this idea of power which occurs with the perception of external successions, but does not originate from

them? Our primitive and original idea of power is gained from events within the sphere of the mind itself. The first power we come to know is the power of the mind; and it is the only power we are ever conscious or immediately cognizant of, as the mind is the only entity we are immediately cognizant of. We cognize the power of the mind in its command over its own operations; and also in its control over the movements of the bodily organs. It was well maintained by Locke, that "reflection on the operations of our own minds" affords us the clearest idea of active power.¹

In causation, as revealed by the control of the mind over its own faculties, both cause and effect are within the sphere of the mind; and we have consequently as certain knowledge of the causal connection as we have of anything. But it is important to consider carefully those internal relations which reveal the power of the mind most clearly. Some who maintain that the idea of power originates within the subjective experiences, apparently limit too much the experiences out of which the idea arises. For example, Dr. Mansel, while distinctly teaching that an "immediate intuition of power" must be sought for "*in mind as determining its own modifications*," seems by the term "modifications" to refer exclusively or chiefly to volitions; and to place the cognition of the mind's power in the cognition of the relation of the mind to its volitions. "My first and only presentation of power or causality," he says, "is thus to be found in my consciousness of *myself as willing*. In every act of volition, I am fully conscious

(1) *Essay*, II., xxi. 4.

that it is in my power to form the resolution or to abstain; and this constitutes the presentative consciousness of free will and of power.”¹ “Our immediate intuition of power, as has been before observed, is to be found in the consciousness of mind as modifying itself, the ego determining its own volitions.” “Power is positively conceived only in the form of ability to choose between two alternatives.”²

It is important in considering subjective causation clearly to distinguish our volitions from the mental changes produced by them; and also to distinguish the relation between our volitions and the mental changes produced by them, from the antecedent relation between self and our volitions. The volition to produce a course or change of thought is different from the change produced by the volition. They are very closely related acts of the one mind, but are different temporally and qualitatively. And the relation between the volition and its effect is not identical with the relation between self and the volition. Now probably our clearest sense of the effort and power of the mind arises, not from the relation of the mind to the volitions, but from the relation of the volitions, or the mind's willing, to the mental modifications or changes willed. It has been denied by some that we are conscious of power in the production of our volitions; but it can not be denied that we are conscious of power in exciting and directing changes of mind by our volitions. We are perfectly conscious of this power in the partial control which the will exercises over the action of the imagination, memory, perception, attention, and over the impulses

(1) *Prolegomena Log.*, p. 133.

(2) *Ib.*, p. 277.

and emotions. We can, by force of will, draw the faculties off from their involuntary courses to determinate action. We can fix our attention upon one thing, and resist the tendency of thought to glide away to attracting objects. We can cherish or resist or suppress an emotion arising involuntarily in the mind. There is the consciousness of power in executing any internal action to which emotion urges, as also in opposing the impulse of the emotions. The possession of power in effecting such mental changes is a fact of our immediate and most certain knowledge; and any one who is not conscious of possessing some degree of it, must be different from other men in the constitutional properties of his mind.

In mental causation, both cause and effect are pure modes of mind. The cause is the mind in the mode of willing another mode of itself which is the effect. Cause and effect being pure modes of mind are immediately known in their distinct and peculiar character; and the causal connection between them is as immediately and certainly known as their individual character, through the unity of the mind. The mental effect follows the mental cause in initiation, but they may and often do continue contemporaneously, and are so known. Uncertainty of the causal connection may exist where cause and effect are the changes of reciprocally external or distinct entities; but uncertainty regarding the connection of cause and effect in mind, between the volition of the mind and the change produced in mind by volition, really can not be uncertain; because the connection is directly given in the unity of the one mind to which both cause and effect belong. Causation in mind depends upon the substantiality and permanency of

the mind. If mind were not an identical substance, but a series of dis severed percepts or ideas, such causation in it as we are clearly cognizant of could not be; and could not be known.

Our consciousness of power in causing changes of mind is clear and definite, in being perfectly distinguished from mere succession of changes without power. Succession with the consciousness of power and succession without the consciousness of power, or causation and pure sequence, define each other and are most clearly distinct. The same contrast that enables us vividly to distinguish the voluntary from the involuntary processes of the mind, enables us likewise to distinguish causation from pure sequence. In the succession of our thoughts and affections, as determined by the laws of association, without the intervention of the will, we are conscious of pure sequence. We know the terms only as following one another. The connection of sequence is clearly known through the temporal unity of the one mind to which the terms belong; but the absence of voluntary power in determining the series is also entirely clear. Both causation and succession are primary and absolutely certain facts of mind. The clear distinction of the two, which the mind makes in their coexistence and immediate contrast, is indisputable.

What, it may be here inquired, are the nature and degree of the mind's causation or power within itself? It is not creative power; but only power to produce change. All the power of the mind, including that over itself and that over external realities, is simply power to produce change. To the Divine Will alone belongs creative power. The mind's power over itself consists only in the ability to excite its faculties

to action and to direct their action. But this power being limited so in its nature, is necessarily limited in its degree. The will does not occasion all the changes of mind, and does not possess complete control over them. It might be asked here, Does not any degree of direct knowledge of the relation between cause and effect in mind require creative power, and not mere directive power over the effect? In the command of the will over our faculties, we are conscious of the connection between the cause and the effect this far, that we know them both as modes of self. We know them as belonging to self, as inhering or rooted in self. We are conscious of self as the bond between them. But, no doubt, our knowledge of the connection would be more complete, if the energy of the will created the operations of our faculties, and did not simply in part control them.

I remark, finally, that our knowledge of subjective causation is entirely from experience. We do not know from the previous knowledge of our voluntary power, the effects we can produce; but we become conscious of our power, in its kind and degree, only in the act of producing the effects. The reality and the range of our power are revealed to us by the exertion of it and the conscious effects. We advance from the knowledge of the involuntary action of the mind and the relation of pure sequence, to the knowledge of the voluntary action of the mind and the relation of causation.

While the doctrine of subjective causation has had many strong and earnest advocates from the time of Locke to the present, it has also had decided and vigorous antagonists. Its most acute and able antag-

onist is Hume. The opposition of Hume has its ground chiefly in his doctrine of substance. As we have seen, he denies the existence of substance. There is none external to and independent of the mind; and "what we call a *mind* is nothing but a heap or collection of different perceptions united together by certain relations, and supposed, though falsely, to be endowed with a perfect simplicity and identity. . . . Every perception is distinguishable from another, and may be considered as separately existent."¹ He remarks again expressly of the separation of perceptions or events: "Upon the whole, there appears not, throughout all nature [including mind], any one instance of connection, which is conceivable by us. All events seem entirely loose and separate. One event follows another, but we never can observe any tie between them. They seem *conjoined*, but never *connected*."² His denial of the causal connection within the mind is but the natural consequent of his doctrine that there is nothing in existence except the mental phenomena, that these phenomena are not the modes of an enduring entity, but exist wholly apart from any substance, and, though externally associated, are yet absolutely severed from one another.

We shall not here enter upon a minute examination of Hume's acute argumentation against subjective power and causation; but hold it can be fully maintained that, in spite of all he has said of our ignorance regarding the ultimate structure of the mind, the union of soul and body, the relation of power to effect, of the *a priori* knowledge of causa-

(1) *Phil. Works*, I., p. 260.

(2) *Ib.*, IV., p. 84.

tion, the limitations and variations of our voluntary power (and on these questions he has said for skepticism about the best that can be said),—in spite of all this, the possession and consciousness of power within its bounds remains a unique fact of our mental being. This consciousness can be explained by nothing but itself, and it can not be suppressed. To resolve our sense of power into habit or custom is arbitrariness. As to the sense of power, an habitual sequence does not differ a particle from a single sequence. The only difference is in our greater familiarity with the former, our better memory of it, the greater ease and rapidity with which its terms call up one another. There is as real sense of power in a single case of exertion as in any number of repetitions. Repetition affects only memory, but adds nothing new to the original feeling of power experienced in the single effort.

There is a mode of causation worth considering in which both cause and effect are within the mind, but in which the relation between cause and effect, as such, is not as immediately cognized as in the cases that we have been thus far considering. I refer, for example, to the voluntary excitation of tactual and muscular sensations. One can produce the muscular sensations of movement and dead-strain at will. One can with equal ease, by means of the locomotive organs and otherwise, excite the most vivid tactual feelings at any part of the superficies. If one prick the skin with a needle, the determination to do so, the cause, and the tactual effect are connected as cause and effect by a round-about series of events and objects. These cases, in which the cause and final effect are indeed both subjective, are to be dis-

tinguished from those cases treated of above, in which the cause and the effect, the volition and the produced change, are in direct sequence and coëxistence.

Having dwelt so long on subjective causation, because of its supreme importance to the perception of all other causation, let us now turn to the consideration of causation in which either the cause or the effect, or both, are objective.

Our discussion of subjective causation will enable us to understand the origin and the worth of our notions of objective causation partial and entire. For, just as external Duration and external Extension are known mediately through internal Duration and internal Extension, so external Causation is known mediately through internal Causation. The three grand, distinct, original properties of the external substantial world, Duration, Extension, and Causation or Power, are known mediately through the like properties of the internal substantial world.

We shall consider, first, causation in which either the cause or the effect is subjective, and the effect or the cause objective. This is important as, in itself, one chief mode of causation; and also as the means by which thought makes the great transition from causation wholly subjective to causation wholly objective.

The most direct and important instance is the voluntary control of the movements of our corporeal organs. In the voluntary movement of an organ, as the arm, the cause is subjective and the effect objective. We are immediately cognizant of the mental effort, the cause; but we are not immediately, but only inferentially, cognizant of the corporeal move-

ment, the effect; for it, like the arm itself, is objective; and we are not, therefore, immediately cognizant of the connection between the cause and the effect. This connection is a dark and unknown region, and series of intermediates, the actions of the nerves, muscles, etc. The muscular sensations which accompany the movement are purely mental; but they are to be distinguished from the mental endeavor which is the conscious cause of the movement. The muscular sensations come by association to measure the degree of effort put forth in causing the movement, and the extent and rapidity of the movement; but are distinct from the exertion of the mind which initiates the series of events that issue in the muscular sensations and the movement. That the relation between the mental effort and the movement of the arm, as cause and effect, is not immediately known, the argument of Sir W. Hamilton, in the following elaboration of Hume's reasoning, shows decisively: "Volition to move a limb, and the actual moving of it, are the first and last in a series of more than two successive events; and can not, therefore, stand to each other, immediately, in the relation of cause and effect. They may, however, stand to each other in the relation of cause and effect, mediately. But, then, if they can be known in consciousness as thus mediately related, it is a necessary condition of such knowledge, that the intervening series of causes and effects, through which the final movement of the limb is supposed to be mediately dependent on the primary volition to move, should be known to consciousness immediately under that relation. But this intermediate, this connecting series is, confessedly,

unknown to consciousness at all, far less as a series of causes and effects."¹

The mind has no immediate knowledge of the bodily organs, and no immediate, innate, instinctive knowledge of control over them. This control it learns and acquires wholly indirectly by experience; and the acquisition proceeds side by side with the knowledge of the existence of the organs. We derive aid in the acquisition of the control, by the involuntary connection between the passions and the corporeal movement, as this connection is found in reflex and spontaneous actions. The mind discovers, first, that it can partly restrain and control spontaneous movements of the organs; and finding out thus its power over them, it begins to originate and wholly control movements. Of course, as the fundamental condition of the control, is a pre-existent real relation between mind and body. The mind only takes conscious possession of what already exists. But it should be recognized that the control over our organs has its definite limits. Some organs never come under the power of the will. Sometimes power acquired is lost by paralysis. The loss is learned, just as the possession was learned, by experience.

But notwithstanding the fact that we have no immediate knowledge of the movements of the bodily organs, and no immediate knowledge of the connection between the volition and the movement, or the transmission of power along the line of the intervening series of causes and effects, we yet have a mediate or inferential knowledge of causation in the voluntary bodily movements, which is trustworthy

(1) Edition of *Reid's Works*, p. 866

and valuable, which can not be denied. The fact that the control over our organs is acquired by slow and tentative steps; that it is at best only partial; and that it is sometimes lost, do not all combined really oppose, but leave full and free, the possibility of causation in the relation of the mind to the physical organs, and of trustworthy knowledge of it.

In the voluntary movement of our limbs, we are at least immediately cognizant of the mental effort. We are conscious of the cause. We are sure of so much. But though consciousness reaches no farther than the cause, the exertion, we have trustworthy inferential knowledge of the effect—the movement, as an effect of our internal effort, in the correspondence between the two. The movement begins, continues, and ceases in perfect obedience to our endeavor. Now this clear and thorough correspondence justifies the inference that the movement is the effect of our conscious motive effort. Though we are not conscious of the passing of energy through that series of movements between the volition and the final movement, we have these good grounds for thinking and believing that there is real causation. We are conscious of the nîsus of the will, we perceive the movement of the organ corresponding to it in time, etc., and we may and do confidently believe that the movement is the effect of our conscious effort. But, doubtless, we would not think of the movement as the effect, or as anything more than the mere consequent, of the mental exertion, if it were not for our knowledge of the connection between cause and effect in pure mental causation, in which we are conscious of both cause and effect as distinct facts and of their connection. The mind is conscious of the

same power in producing directly mental change and in producing bodily change. There is identity of cause with great diversity of effect. The mind is conscious of the cause in both cases. But it is conscious of the connection of the cause with its effect only in the first case. In the second case, because of this consciousness in the first case, and because of the observed regular sequence of the external effect upon the internal cause, it infers that the former is really the effect of the internal cause. The transition, in this manner, from the same cause to a different effect, thought is not very long and not very much embarrassed in making.

The knowledge of causation, where the effect is subjective and immediately known and the cause objective, is much the same as in the cases where the cause is subjective and the effect objective. Having one of the terms of causation, either the cause or the effect, within the mind, it is not a long or very difficult process, after the experience of pure subjective causation, to infer either the objective effect or cause.

We come next to consider the cognition of pure objective causation, of causation in which both cause and effect are external to the mind. We surely think, as was above remarked, of external objects as bearing power, and as standing in the relation of cause and effect. In every case where we see a moving body striking another and setting it in motion, we think of the first as possessing power to move the second. We never think that the case is pure succession with no power. It is objected, as has been noted, by Hume and his followers, that we never perceive any power in external things, but only succession; and that the conviction of this power must be a delusion.

The attempt to identify our notion of external power and causation with that of pure succession, is a violent misrepresentation of its character. We most distinctly and most positively think of change and succession among external objects as coming to pass by the power one object has to affect another. We indeed do not see this power in or between objects, we see only pure succession; but the conviction that it exists is one of the strongest convictions of the mind regarding external nature. That a notion which is so universally received and applied should be a delusion, is highly improbable. To dismiss the notion as a delusion is unreasonable. It must be accounted for. It can be held to be a delusion only when it has been shown to be occasioned by or grounded on delusion. But it is possible, on the contrary, to account for the rise of the notion and to maintain that it is true to external facts.

Our notion and conviction of pure external causation, as was above said, is based upon or derived from our immediate knowledge of internal causation; and it is true and not an illusion, because it is based on what is true. The notion is a mediate knowledge well grounded, as all mediate knowledge must be, on a knowledge that is immediate. In truth, external causation, like external duration and extension, is just as real as the internal; but it can be known or understood only by the experience of the internal. Our immediate experience of power within the mind itself, where we are conscious of both cause and effect, we apply to external events and successions; though not immediately, but, as I have remarked, by the mediation of those experiences in which the causal relation is partly subjective and partly objective. A

player drives a billiard-ball. He is conscious of the exertion, and knows that the movement of the ball is the effect of his exertion. When the ball strikes upon another in its course, and moves it, he regards the first ball as the cause of the movement of the second, as having force to impel it, just as he impelled the first by his own energy. Such great similarity of effects leads at once to the inference of similarity of causes,—to the inference that the second ball was moved by the power of the first, just as the first was moved by the power of the player. The movement or change of place of a bodily organ, caused by mental effort, is the same as the movement of any external body caused by another external body. From a likeness of effects we reason to a likeness of causes; we conclude that power produced the movement in the second case as it produced it in the first.

Thus we attain our notion or knowledge of external causation, by starting from our immediate knowledge of internal causation. There are two steps in the process. First, we advance from pure subjective causation, to causation partly objective, as the voluntary command over the corporeal organs. This first advance is a reasoning from the known identical cause, viz.: volition, to similarity of effects; *i. e.*, we conclude that the effects (the mental change willed in the one instance, and the bodily movement in the other), though very different in themselves, are yet similar in being effects and not mere consequents. Secondly, we advance from the knowledge thus acquired of partial objective causation, to causation wholly objective. This second step is a reasoning from effects that are identical in kind (being motions) to similarity of antecedents; *i. e.*, we conclude that

the antecedents (the mind in the one case, and the first moving body in the other) are similar in being antecedents possessing power.

We have been maintaining that power, like the two other great properties of the substantial world, extension and time, is first known as belonging to mind; and then is known as belonging to the material or external world inferentially or mediately through our knowledge of it as belonging to mind. These three primary properties of substance as they exist objectively, are known representatively through the same properties as they exist subjectively. But here rises an important question. Can we rightly suppose that there is sameness or likeness between subjective and objective power, between the power of mind and the power, force, energy of matter; or such a degree of likeness as exists between subjective and objective extension and between subjective and objective time?

There is a degree of likeness between mental and physical power or causation; for if there were not some likeness we would have no basis on which to know or infer the objective causation. But we have not sufficient ground to assert that the two powers involved in the two causations are in nature or essence the same. Nor have we ground to hold that they are reciprocally transmutable. Further, we can not hold that the interaction of mental and physical power comes under the principle of the conservation of physical energy. As far as we seem to be able to apprehend, when mind acts on matter, and matter acts on mind, there is no transmutation of energy, or addition to the energy of the affected side. There appears to be no loss and no gain. Each mode of energy remains entire within its own sphere. There

is mutual influencing; but it seems not to be comprehended under the law of the interaction of material masses. It must be a much more general law that embraces mental causation, physical causation, and the reciprocal mental and physical.¹

The significant question now presents itself, What do we then really know of external power or causation? If there be such unlikeness between mental and material power as we have been supposing, and such difference between the interaction of mind and matter and the interaction of material objects, we can not claim to know the power in external causation in its real or inner nature. But this we may claim to

(1) The interaction of mind and matter has been thus conceived:

"There is action and reaction between body and soul, but it is not of a kind in which energy passes from one to the other,—as when a man pulls a trigger it is the gunpowder that projects the bullet." (Clerk Maxwell. *Life*, p. 336.)

"It is also urged that giving particular direction in a special act would be an addition to the *plenum* of force in the universe, and therefore a contradiction to the recently acquired scientific principle of the conservation of energy. The answer may be this. It is not at all certain that all direction given to force expends force; it is certain that, under collocations, a minute use of force (as pulling a trigger or jostling a valve) may bring about immense results; and, finally, increments of force by Divine action in time, of the kind in question, if such there be, could never in the least be known to science." (Gray, *Natural Science and Religion*, p. 96.)

"Though the spheres of *moral* and *physical* Causation impinge (as it were) upon one another, they are in themselves essentially distinct. The influence of a great Idea conceived by a thinker in his closet, in dominating the action of an entire Nation, is utterly disproportioned to any conceivable play of molecular forces that can be excited by the Physical agency of the thinker in putting his idea into speech or writing." (Carpenter, *Mental Physiology*, 6th ed., p. xviii.)

know, and in such a manner as was described above, namely, that in external causation antecedent does not merely precede consequent, but, as in mental causation, efficiently determines it. As we never perceive or know the ultimate particles of matter, but yet accurately know the forms, magnitudes and motions of bodies composed of them; so we know not the inner or ultimate nature of the force in physical causation, but nevertheless know that this causation is more than pure succession, that the antecedent, as the antecedent in mental causation, has productive efficiency, or determines the consequent. Subjective and objective causation differ, then, respecting the nature of the powers that operate in them; but they entirely agree in the very important point that in both the cause, so called, produces or determines the effect, and the effect is determined or produced by the cause and does not simply succeed it as an independent event.

In the discussion of causation, we have confined attention to the origin and nature of the idea of causation, and have not extended it to the supposed necessity and universality of the idea, or the principle that every event must have a cause. This principle, deemed by many the most important by far pertaining to the subject, we shall consider in the last Book; where we shall treat of the attributes of necessity and universality not only in relation to the idea of causation, but generally.

CHAPTER VII

COGNITION OF FINITE SPIRITS.

In this Book we have been occupied to this point with the cognition of matter and unintelligent being. Let us now turn to the consideration of the cognition of external or distinct spiritual being; and, first, to that of the cognition of human spirits.

We start with assuming the distinctness, mutual exteriority and independence of human spirits, against the view that makes them but modifications of the same entity, or terms of the same subjective series, or pulses of the same subjective evolution, or phenomenal differentiations of the same undivided reality. At the same time we must acknowledge the necessity of not carrying the severance and independence of minds to the extreme. If minds are separate entities, they have yet very close relations. They are connected by the relation of traduction; they proceed from the same Divine Source; they are supported in individuality, activity, and consciousness by the same Divine Power; and are capable of mutual and close affection.

Our knowledge of other human spirits is not immediate, but mediate. Distinctness and independence of being exclude spirits, as really as they exclude matter, from the consciousness of the ego; and the only way therefore left by which one spirit can know others, is representation, by means of the affections they excite in it. One spirit knows others only

through its own modes representing them. Further, the knowledge of spirits is mediate knowledge of more than one step; that is to say, they are known not by the modes they excite by acting directly on the mind, but by acting through other or material objects. The intermediate objects are known through the affections of mind they excite by their direct action; and spirits are known through these objects. Spirits are therefore known as spatially external to consciousness by means of our knowledge of matter and force as external to consciousness. If we had no knowledge of real extension and external matter and force, it is more than probable that we would not know spirits external to and distinct from the ego. To endeavor to maintain the existence of spirits really objective to, or separate from, the ego, while denying the real objectivity of matter and force, as some able psychologists appear to do, is to become involved in confusion and fallacies.

Our knowledge, in itself, of our fellow spirits is not only mediate and purely subjective, but is also complex. It is a product of the intellect compounding the primary elements of knowledge, sensations, emotions, and volitions. Our intellect combines our own elementary states into complex notions of objective fellow spirits. But this fact of subjective synthesis is nothing against the truthfulness of our complex notion to the objective individual spiritual being; just as we found that the same fact is nothing against the truthfulness of our perceptions as complex representations of individual material objects.

The human body is the primary medium in cognition between mind and mind. We know our own body. We know its involuntary and voluntary states

and movements in association with, or as concomitants, and as signs, of the states of our mind. Particular bodily movements and states permanently associate themselves with particular modes of mind, and are so known. Thus knowing our own body, and these relations between it and our mind, and knowing also other human bodies, we infer from the states and movements of these other bodies the existence within them of other invisible minds. We infer other minds from the movements of their bodies, because we know that the movements of our own body are produced by our mind, and are associated with certain of its states. From similarity of bodily movements, we infer similarity of mental affections or minds. Tears and rapid motion are the expression of our own grief and excitement. When we see the tears and rapid motion of another, we take them as the expression of similar grief and excitement in him. Differences of faculties, etc., also are inferred from differences in bodily action and demonstration. In this manner, by the mediation of the body, we acquire the knowledge of our fellow spirits; and our knowledge, in amount and certainty, is what is possible by this manner.

But we are not long left to mere bodily movements, gesticulations, inarticulate sounds, as the means of communication. Language, symbolic of these and of the subjective affections, gradually becomes the detached, free medium of intercourse; and brings the communion of spirits, separated by the thick, dark, and impenetrable vail of the flesh, to a degree of facility and intimacy truly astonishing. Language is both the striking result and means of the intimate fellowship of minds.

Our whole knowledge of our fellow men, in their complex character of body and mind, is accordingly mediate, and of two stages. First is our knowledge of the body. This knowledge is a perception compounded largely of sensations. Then, secondly, through the manifestations of the body, we advance to the knowledge of the spirit as an intangible and invisible entity within the body. The different affections, sensations, emotions, and volitions, as they are revealed by the different corporeal motions and manifestations, are combined by our intellect into a unity, or conceived to be the modes of one agent corresponding to the one indivisible agent we are cognizant of in the diverse modes of self,—in the diverse modes of self which are representative of the spiritual not-self. Our complex notions of our fellow spirits are possible, and are true representations of them, on the basis of our knowledge of the unity of self.

In accordance with these views, I have already remarked above that the cognition of our fellow men, as compound material and spiritual individuals, is, properly, perception. But, as was there said, it is a perception of two distinct stages. The perception of the body is the first stage; the perception of the soul the second. The perception of the body is an inference; the perception of the soul is an inference made upon the inference of the body, and then associated with it in one whole perception.

But it should be observed that there is a contemporaneous development of the notions concerned in the cognition of our fellow men; that is, we do not acquire our complete knowledge of ourselves before we do or can acquire any knowledge of them; we do not gain a full knowledge of their bodies before

we gain any knowledge of their spirits. We know self before we know others; we know their bodies before we know their souls; but after this successive initiation, these knowledges go forward together to completion with reciprocal influence and aid.

As a fundamental condition of the ready and complete understanding and intercourse between human spirits, must be recognized their antecedent real likeness of nature. They are images of the same Original, and have been created with the same adaptations to the same sphere and conditions of existence; consequently, with this sameness of being, they readily interpret the bodily manifestations, by these outward signs easily enter into the inner spiritual life, of one another.

Our notions of the mental nature and activity of all earthly inferior creatures are gained in a way similar to that by which we get our knowledge of our fellow men. We interpret their bodily actions by our own. We infer the existence and extent of their intelligence and passion by their physical motions in comparison with our own. By the comparative complexity, adaptation of means to ends, etc., in their actions, we measure their inferiority in comprehension, endurance, acuteness of thought and feeling. But the knowledge of coördinate minds is easier than the knowledge of minds below or above us. It requires great effort either to descend or to ascend without error from our own plane.

The clear notion we have of other finite spirits, our fellow men, as exterior to and independent of us, with the unqualified feeling of certainty as to their existence, is a very strong fact against current solipsism and idealism. If there were truth in the ideal-

istic doctrine that objects exist only for our thought, or are the products of our thought; that we are incapable of knowing or representing anything that has existence outside and independent of our thought; then other persons could only be modes of our own self or our own thought, they must all be inclosed within our own ego and consciousness. But that is a conclusion no man can really believe. No man does or can go on the assumption that other people are only phenomenal, or exist only by his thought or exist only within his ego, and are not distinct and independent beings as capable of knowing him as he of knowing them. The clear conception and potent conviction of every man that other men are coördinate and independent existences exterior to himself, would be impossible on the basis of the idealistic doctrine; the actuality of this conception and conviction therefore proves that that doctrine is not true, that there are principles and possibilities of knowledge which it does not take account of.¹

(1) "It has never been made clear how persons, who are never phenomenal, can be reached in a theory of purely phenomenal knowledge." "If a skeptical conclusion is to be based upon the process of knowledge alone, it can not be restricted to things, but must be also extended to persons. If this be done, skepticism becomes farcical." (Bowne, *Theory of Thought and Knowledge*, pp. 281, 285.) This writer apparently agrees at least in part with Professor Royce in basing one's knowledge of other human beings on a mode of pantheism. Says the latter: "However diverse, or separate, the moral individuals may be, the reality of their separation itself is a fact for the unity of the Absolute Experience." "The fact of other individuality than mine is to me *in my private capacity* something transcendent." "The total constitution of the world of fact must be presented to a concrete whole of actual experience, of which ours is a fragment." (*Conception of God*, pp. 169, 170, 167. Cf. the same author's *Spirit of Modern Philosophy*, p. 408 seq.)

The conclusion required by the idea and belief of other persons, bears on the cognizability of objects that are not persons, as material objects. It proves that at least the possibility of perceiving material objects, considered as external to and independent of our mind and thought, can not be justly denied.

CHAPTER VIII.

COGNITION OF GOD.

The knowledge of the existence and character of God has formed a living question in all ages, and has aroused and engaged the energies of the greatest minds more deeply and fully perhaps than any other. This is accounted for by the speculative interest and practical importance of the subject and by atheistic teaching.

In the defense of the existence of God and the truthfulness of our knowledge of him, diverse modes of reasoning and arguments have been employed, which have variously had ascendancy in successive periods, and also have prevailed simultaneously with different classes of thinkers. The chief of these arguments are the so-called Ontological, Moral, Cosmological, and Teleological.

Different forms of the Ontological Argument were developed by Anselm and Des Cartes. Anselm, in brief, taught that it must be granted that the human mind possesses the idea of the most perfect Being conceivable. Now the most perfect Being conceivable is one who, besides subjective existence in our thought, has existence external to us, to which the subjective thought corresponds. A being of only possible objective existence is one far inferior to the most perfect Being; consequently our idea of God, being the idea of the most perfect Being, necessarily implies the objective reality of God. In this nec-

essarily implying the existence of a corresponding objective reality, the idea of God differs from all other ideas.

Des Cartes argued that our idea of God implies an objective reality, first, because it is a clear and distinct idea; but, more certainly, because it is the idea of an infinite Being. Man, a finite being, can not of himself imagine an infinite being, because no finite being can imagine a much more perfect being than itself, or the most perfect being. The idea of God, the most perfect Being, existing in the mind, can not therefore be the work of the human imagination, but must be the production of God himself. It is in fact an innate idea representative of himself, which the great Artificer has inwrought in his work. Des Cartes employed also the reasoning of Anselm, that the idea of the most perfect Being necessarily implies in itself the existence of a corresponding objective reality.

In opposition to the doctrine of Anselm, it was argued by opponents in his own day, as by the monk Count Gaunilo, and the argument has been often repeated to this day against both Anselm and Des Cartes, that a subjective idea by no means necessarily implies the existence of a corresponding reality. This objection is potent against the Ontological Proof, and has never been satisfactorily answered by its advocates. Yet it is a mode of objection that may evidently be carried too far, and prove too much. For if, on the one hand, an idea does not necessarily imply the existence of a corresponding distinct reality, yet, on the other hand, we have no other means of knowing objective realities than through our ideas of them. Having no immediate knowledge

of beings distinct from the ego, we can not have any knowledge at all of them, or any reason for believing in their existence, except through our ideas representative of them. There are ideas which have corresponding objective realities, and ideas which have not. Of the former are our perceptions; of the latter are many constructions of the imagination. Whether an idea can be held to represent such a reality, depends on how the idea arose or was formed. The Ontological Proof of the existence of God is not in error in holding that a pure subjective idea has a corresponding object; but in holding that the idea is innate or *a priori*; that the idea, because it is the idea of the Supreme Being, implies his real existence necessarily, or implies it with much more certainty than any other idea implies the external existence of its object. The Ontological Proof, as was remarked by Kant, begins where it ought to end. The only basis for holding to the real existence of the Supreme Being is in the account that can be given of the rise or synthesis of the idea of him,—in showing, by the application of the proper canons, that this idea is a just induction and synthesis from perceptions and our real experiences, and not merely an ideal of the imagination.

The Moral Argument for the existence of God is based chiefly on the moral nature of man, and particularly on the moral feeling, the feeling of obligation. It is held that the feeling of obligation requires and proves the existence of a God who is to be revered as the author and ruler of the moral kingdom. Probably the Moral Argument is valued by the majority of theists more than any other. It alone has any real value in the eyes of Kant. After Kant, in his critical

philosophy, had excluded God from the knowable, he yet, in his practical philosophy, holds on to the real being of God as an implication of the moral nature of man; and thus maintains that our subjective moral nature makes known in a fashion or warrants the postulation of, objects beyond the reach of our speculative reason or intelligence. He says of God and immortality: "After the frustration of all ambitious aims of a reason ranging beyond the limits of all experience, there yet remains enough to afford us contentment in practical matters. Certainly no one will be able to boast that he *knows* that there is a God and a future life. For if any one knows this, he is just the man whom I have long sought. All knowledge (if it concerns an object of mere reason) can be imparted, and I might therefore hope, through his instruction, to see my knowledge extended in so wonderful a measure. No, the conviction is not *logical* but *moral* certainty; and since it rests on subjective grounds (the moral sentiment), I must not even say, *it is* morally certain that there is a God, etc., but, *I am* morally certain, etc. That is to say, the belief in a God and in another world is so interwoven with my moral sentiment, that I fear just as little that the former can ever be snatched away from me, as I run in danger of losing the latter."¹

In some degree similar to this is the view held by Jacobi; that we have knowledge of God through the power of faith as distinguished from the understanding. He affirmed that God is present to the heart of man as nature is present to his senses. "There is light," he says, "in my heart, but when I seek to

(1) *Kritik d. r. V.*, p. 546. See pp. 403, 429, 430.

bring it into the understanding, it is extinguished. Which illumination is the true one, that of the understanding, which discloses, indeed, well defined and fixed shapes, but behind them an abyss, or that of the heart, which, while indeed it sends rays of promise upwards, is unable to supply the want of definite knowledge?"¹

The Moral Argument owes much of the superior favor shown to it at the present to the influence of Kant. Alarmed at Kant's destructive criticism, and at the confusion introduced by it into the science of knowledge, many have fled to this argument as the only or the main refuge.

Considered especially so far as it is grounded on the feeling, the emotion, of duty, obligation or respect, the moral argument must be allowed to possess a measure of force. But certainly its advocates have endeavored to get too much from it; they have made assumptions with it and upon it which rigorous and impartial thought can not admit.

A chief fault of this argument (and the fault is a very serious one) is that it proceeds in opposition to the psychological law, that emotions follow and are aroused (though not originated) by the cognitions of the peculiar objects to which they refer, and do not precede and lead to or effect these cognitions. Now God and his laws (and no thing inferior to them and none merely subjective) are the primary and special objects of the feeling of duty. And this feeling does not precede the cognition of God or give to our notion of God the stamp of possessing a real objective which it symbolizes or represents. On the con-

(1) Ueberweg, *Hist. Philosophy*, Morris tr., II., p. 200.

trary, it is the cognition to some degree of God as our maker, and of the moral laws as objective and ordained by him, and of our state of obligation, which excites the feeling of obligation; and as the cognition grows in perfection, the feeling grows in power. The cognition calls the feeling forth from unconsciousness to consciousness. It is the necessary antecedent of the feeling. There would be no feeling, if it were not for the preceding cognition; just as a rational being might have the cognition without anything of the feeling. There may be a preëstablished harmony between feeling and cognition or object; but at the same time the feeling has no power to arouse itself, and to suggest as its correlate, or to grope after and search out, its special object and standard, to attach itself to it and first or chiefly make it known, or to assure us of it. The feeling is called forth by the presence of the idea of God gained previously, in at least some of its main elements, from other sources than the feeling itself. To make the existence of God a postulate of the feeling of duty, instead of regarding the cognition of his existence as the antecedent and exciting cause of the feeling, is, in short, to reverse the real order of the moral phenomena.

But in what has been said, we do not mean to shunt the feeling of moral obligation wholly out from the proofs or evidences of the existence and character of God. Like all other subjective phenomena, it must be allowed a place among these. This feeling being the work of God, is like his other works evidence of his will and character. But being only a part of the spiritual phenomena, it contributes only a corresponding part to this evidence. Some good, clear knowledge of the superiority and creatorship of

God, of his requirements, and of man's subjection and dependence, may and must be obtained before and without the emotions of duty. The emotions follow this knowledge because they must be awakened by it; but when awakened, they react and enter into and help to complete the knowledge which awakened them. Probably no one fact more clearly shows that man is fearfully and wonderfully made, than the vigor with which the feeling of obligation often enforces the practice of the laws of morality. Accordingly, this feeling follows the knowledge of God; but in turn contributes to our fullest knowledge of him.

If, however, it should be said that, though the moral feeling is aroused by the idea of God gained previously, yet this idea is illusory, or merely regulative of our thinking, or a mere symbol, having no real correspondence to a real being, and the feeling is the only important factor, it alone gives evidence of a real Supreme Being; the reply is, that we have no reason for giving a higher rank to the moral feeling as implying the existence of God than to the idea which precedes and excites it; that if this idea have no correspondence to a real being, but is merely an ideal of the imagination, or illusory, the feeling of obligation dependent upon this ideal can not be, in its supposed implication of the existence of a Supreme Governor, less illusory. If the moral feeling attests the existence of God, it attests the worth of our idea of him,—of the idea by which the feeling itself is excited. If the feeling can not be an attestation of the trustworthiness of this idea, then it can not be of anything beyond or distinct from itself. The attempt made by Kant wholly to exclude God from the knowable, from the reach of the cognitive powers proper or

the intellect, and then to retain him as a requirement of the moral feeling and nature, is but an instance of the arbitrariness that too often accompanies the acuteness and profundity of his speculations. He first grants too much to skepticism to be able to recover or to hold anything worth holding. To affirm that by the cognitive processes proper we do not and can not apprehend God or form a representation of him which is true in any degree or particular to his real nature, is clearly, when free from verbiage and when understood in its real character and scope, a throwing up of the theistic problem, and as complete a surrender as atheism need ask.

Putting the moral feeling above intelligence as alone affording justification for the conviction or postulation of God, is but a phase of a more general doctrine, or but an instance of a general tendency, namely, the tendency to distrust and depreciate the ordinary powers and processes of intelligence; to suppose that we can perceive objective realities through the feeling as distinguished from the senses, or that a feeling, wish, need, proves the reality of a corresponding object; to give supremacy to the practical reason over the theoretical; to regard emotion, impulse or striving as the primary function of the soul, and representation or intellection as secondary and derivative and but an instrument of the former, or to consider man as chiefly an emotional or impulsive being and as only secondarily intellectual. Kant says of the moral law and the supersensible in general: "Of all the supersensible absolutely nothing [is known] except freedom (through the moral law), and this only so far as it is inseparably implied in that law, and moreover all supersensible objects to which rea-

son might lead us, following the guidance of that law, have still no reality for us, except for the purpose of that law, and for the use of mere practical reason." ¹ In the essence of this doctrine Kant has had a numerous following. Kaftan says: "A conviction as to supersensuous things, and consequently an answer to the ultimate questions we come to ask, is *always* arrived at on the ground of practical motives, and so only must and can it be." "Strictly speaking, the Unconditioned can be an object of *Knowledge* only in so far as we can know that in most men an inclination, a longing, is aroused to get beyond this world of the Conditioned and changeable. The inclination for the Unconditioned is not rooted in any form of knowledge, but in Will, in Feeling." ² The

(1) *Practical Reason*, (Theory of Ethics, Abbott tr.,) p. 162.

(2) *Truth of the Christian Religion* (Ferries tr.), I., p. 285 and p. 238. "The Soul, the Subject, the Ego, or whatever we may call it, is not chiefly perception and thought, but willing, striving." The true method "starts with the primacy of the Will in our self-consciousness and of the practical Reason in our philosophical speculation." (*Ib.*, p. 297 and p. 302.)

We quote from others: "The center of man is to be sought not in the head, but in the heart, not in knowing, but in willing." "The essence of the soul not in the intellect, but in the originally and essentially unconscious will." (Duessen, *Metaphysics*, Duff tr., p. 112 and p. 114.)

"In jüngster Zeit neigt die Psychologie mehr und mehr dazu, den Willen als die primäre und konstitutive Seite des Seelenlebens, die Intelligenz dagegen als eine sekundäre Entwicklung zu betrachten. Es ist Schopenhauer, der hierin vorangeht. Er sieht in Willen die Grundfunktion der Seele, die von der Vorstellung nicht abgeleitet werden kann, vielmehr ursprünglich ohne Vorstellung oder Intelligenz überhaupt als blinder Drang oder Trieb auftritt und erst mit aufsteigender Entwicklung die Intelligenz sich als Werkzeug anbildet." "Noch mag darauf hingewiesen sein, dass auf gewisse Weise Schopenhauers Theorem von dem Primat des Willens durch Kants Lehre vom Primat der

tendency, especially among later writers, to give superiority to the practical reason over the theoretical, to emotion or striving over knowledge or intellection, is in part a justifiable reaction from the extreme intellectualism that ignores the independence and importance of the primitive feelings, impulses, strivings of the mind; but it is chiefly the result of the degradation of intelligence involved in the Kantian phenomenalism, than which a more misleading and baneful doctrine never gained entrance into the philosophy of knowledge.

It is true that the primitive impulses and feelings, including sensations, precede intellection in the order of development. The infant may be said to be all will, will being taken in the wide sense in which it is understood by Schopenhauer.¹ These primitive experiences are, as already considered, among the original materials of the intellect, and are indispensable to it. Without the antecedent rise and supply

Praktischen Vernunft vorausgenommen ist." (Paulsen, *Einleitung in die Philosophie*, 4. Aufl., p. 117 and p. 118.)

"Der Wille, als das Ding an sich, macht das innere, wahre und unzerstörbare Wesen des Menschen aus; an sich selbst ist er jedoch bewusstlos." "Der Wille in allen tierischen Wesen das Primäre und Substantiale ist, der Intellect hingegen ein Sekundäres, Hinzugekommenes, ja ein blosses Werkzeug zum Dienste des Ersteren, welches nach den Erfordernissen dieses Dienstes mehr oder weniger vollkommen und kompliziert ist." (Schopenhauer, *Die Welt als Wille u. Vorstellung* (Hendel), II., p. 201 and p. 205.)

(1) "Jeder Mensch tritt als blinder, intellektloser Wille in die Welt. Der Säugling ist ganz Wille, kräftige Triebe äussern sich in heftigen Bewegungen, die Verrichtungen sind mit lebhaften organischen Gefühlen begleitet; aber die Vorstellungsseite fehlt noch ganz, die Bewegungen sind blinde Reflex- und Instinktbewegungen." (Paulsen, *Einleitung in d. Philosophie*, p. 120.)

of materials, the intellect, or constructive power of the mind, would not exert itself, it would not fashion perceptions and representations. So far intellection follows and is dependent upon the primitive experiences. But intellection has in itself distinct importance. It is a special synthesis and fabrication. Moreover, it precedes and is the condition of the development of the higher feelings and of the volitions properly so called. It does not indeed generate feelings and volitions, but it elicits them: it is a necessary occasion of their rise. Among the feelings so following upon intellection should be placed the feeling of moral obligation or necessity, as above indicated, and the feeling of dependence. The feeling of moral necessity is called forth by intellectual representations of a personal authority and of our condition of obligation; and the feeling of dependence, by representations of objects upon which we are dependent, or of our condition of dependence. These feelings do not rise independently of knowledge, and determine the knowledge of their objects. Their chief agency, as respects God, is to excite the intellect in turn to further comprehension of his existence and moral government, to emphasize his laws and claims already known and urge to obedience. As to volitions proper, they only follow objects or ends and means presented by the intellect.¹ While, then, feel-

(1) A fundamental error of Schopenhauer and his followers is confounding impulses, emotions, affections, with volitions proper, or the involuntary acts of mind with the voluntary. "Nicht nur das Wollen und Beschliessen im engsten Sinne, sondern auch alles Streben, Wünschen, Fliehen, Hoffen, Fürchten, Lieben, Hassen, kurz Alles was das eigene Wohl und Wehe, Lust und Unlust, unmittelbar ausmacht, ist offenbar nur Affektion des Willens," etc. (*Die Welt als Wille u. Vorstellung*, II., p. 202.)

ings, impulses, tendencies, precede intellection and constitute necessary matter for it, yet, on the other hand, intellection precedes the higher feelings and the volitions; and we can not say that the intellect is more really dependent upon some of our experiences, than other of our experiences are dependent upon the intellect.

Again, it is true that the moral interests and ends of life are supreme; that all else is subordinate to them. All our knowledge has its highest offices in the service of morality and of God. Nevertheless, the supremacy of these ends does not require us to deny to knowledge distinct and great importance considered apart from moral agency; we detract nothing from the character of, and from the reverence due, morality by upholding intelligence in its proper place and dignity. God has his primary importance for us as the moral Sovereign; but he has yet distinct and real importance simply as an object of knowledge. The idea of him as the intelligent Creator has original value as a form or construction of our intelligence, independently of the moral law and moral obligation. Further, it is more than doubtful whether practical or moral life conditioned, as some philosophers conceive, by illusory and mythological knowledge, is possible. How can there be ground for real moral life or conduct, if the thought of the world, our fellow men, and God, have no real correspondence to objective realities? Moral life can not be supported by confessed phenomenal delusions or a subjectively created world; just as it is not possible for one sole being. In short, we must regard real knowledge of the independent external as a condition of moral agency. Finally, it should be remarked

That the controversy should take this form may excite dismay in some minds, especially in those who reflect much on the difficulties that beset and harass the human understanding in attaining to a consistent knowledge of God, and who have been accustomed to flee to feeling as a refuge from these difficulties. But there is no sufficient ground for such fear. No doubt there are difficulties and great labors for the intellect; but, on the other hand, there are valuable resources, and proofs, and grounds for hopefulness. The true course of the theist is not to give up to these difficulties, and to resort to mere instinct or feeling (which is nothing less than a surrender to the enemy); but to hold his intellectual powers rigorously and persistently to the struggle; and he can not ultimately fail. There are reasons for believing that theists are destined, through this method, by the careful, courageous and resolute employment of all their resources, to establish a more widely and confidently received theology than what at present apparently finds acceptance in the philosophic world.

Leaving now further consideration of the peculiarities of the several proofs for the existence of God and theories of knowing him, let us turn directly to the main question. If God be knowable, and knowable by the intellect, what is the nature and process of the knowledge?

But before proceeding with this, let us for a moment inquire as to the existential relation that God holds to man. This relation subsists under our knowledge of God, and must determine its character. It is yet true that the knowledge of the relation itself is gained only through the principles concerned in

our cognition of God; nevertheless, for facility of discussion we may provisorily conclude as to the character of the relation, leaving the proof of our conclusion to depend upon the principles of cognition to be afterwards considered.

The relation in which the Divine Mind stands existentially to the human mind has never been exactly determined, and seems beyond human power to determine. The relation appears to imply both difference and unity; but the great difficulty for us is to ascertain the degree of either. This has not been definitely ascertained, and may never be.

There are two extreme views: one makes too much of the unity, the other of the duality. The one favors pantheism, in which all individuality is extinguished, or supposes that the human mind is but a moment, mode, fragment, constituent, of the Divine; that human experience is but God's direct expression or realization of himself, and is not separate or distinct. It has been said, that God is personal, or comes to consciousness, only in man. The other view severs the human mind too thoroughly from God, conceiving it as having been created by God, but as then thrown off from him to exist in isolation and independence. Extraordinary attributes and capabilities are assigned by some to the independence of the human mind; as, for example, that of making the apparent extended world, and that of dictating moral law to self, and also to the universe, and even, in a manner, to the Deity himself.

The theory of extreme oneness seems to be in conflict with some of our clearest and most important experiences. First, it is opposed to the fact of the close and rigid boundary prescribed for human

consciousness or immediate knowledge. No man's consciousness extends beyond himself and his own modes. We infer much that is beyond ourselves, but are conscious of nothing. This precise and fixed inclosure of the self, this sharp separation from all else, seems not reconcilable with the unity between the human and Divine maintained by the pantheists. Under the general fact of the limitation of consciousness, are included some very significant particulars; as the intellectual and the moral individuality of the human person. Every man feels that his intellectual processes, the correct and the incorrect, the true knowledges and the mistakes, errors and delusions, belong to his own strict self. The pantheistic hypothesis, on the contrary, in effect makes the mind of God the agent in all human thought and of course in all human error and illogical procedure. Again, every man is convinced of his moral individuality, of his freedom and accountability. But, according to pantheism, God is the author of all human deeds, right and wrong; he communicates all purpose and activity. A pantheistic writer has said, God is in men "just in so far as they are alive, hearty and humane." But is he not then also in them in so far as they are dead, heartless and inhuman? which they too often are. Must not God be also expressing, realizing, actualizing, himself in all human transgressions of thought, wish and overt action? Or, if men are independent in sin, why may they not be to some extent independent also in righteousness? According, then, to the theory of unqualified unity or immanence, our moral experiences, our convictions of individuality and responsibility, of transgression and guilt, must be delusions; or rather they would be altogether impos-

sible, such experiences could never arise from the supposed ground.

Further, this theory presupposes a closeness of relation between man and man that is not in harmony with some of our most certain cognitions; as, for example, first, with the manifest spatial separation of man from man. Again, it is not in harmony with the intellectual and moral independence which every man so certainly feels himself to possess in respect of his fellow men. It can not be denied that every man is greatly influenced by association with his fellow men, is greatly dependent on them for development in conduct and character; but with this dependence there is also independence, which manifests itself, for instance, in the decided intellectual and moral differences, contrasts, antagonisms, that unquestionably obtain among men. All this diversity can not be supposed to be the direct realization of the same Self or Individual. Here it may be remarked that while the severance between man and man can not be regarded as a true representation of the severance between man and God, yet it indicates to us the possibility of division or discreteness between them.

The truth as to the great question of the link between the Divine and the human being lies somewhere between the doctrines of perfect oneness and perfect duality, or of exclusive immanence and exclusive transcendence. God is the creator and sustainer of the human mind, and as such can not be far away from it, can not be an "absentee God"; but, on the other hand, there must be in some sort a division, or detachment, or loosened relation between Creator and creature, for the Creator can not be the imme-

diate author of the mistakes, errors and sins of the creature. The human mind must not be thought to be isolated from God, as the mind of one man is commonly thought to be isolated from the mind of another; the certain very considerable independence of a man, as regards his fellow men, in his moral action in many instances, is not a true image of his independence as regards God; nevertheless, this isolation or independence of man in respect to man helps to and justifies the conviction of the possibility and actuality of something not altogether unlike it in respect to God. We must suppose that God is no more the direct responsible agent in the intellectual and moral aberrations of men, than one man is in many cases in those of others.

God continues in existential communion with, or immanent within, the soul of man, as the support of its being; but, at the same time, the union of the divine and the human is not so close as wholly to absorb the individuality of the latter, as to make distinction between them of consciousness and of action impossible. There is a separateness of self-consciousness and a separateness of action which make possible ignorance in the human of the divine, and moral responsibility of the human to the divine, and moral alienation. As to man, God is immanent; and is also transcendent in a sense that means more than simply being the whole of which each human mind is an inseparable fragment or finite mode or moment. But in holding to both the immanence and separation or transcendence of the divine, and to the creatureship or dependence and independence of the human, we must admit our inability fully to reconcile them. The possibility of created beings existing in any manner

or degree distinct from the Creator, with a consciousness distinct from his consciousness, and not absolutely determined in all their actions by his will, but possessing self-determination within a certain sphere, or of a certain degree,—in other words, the special nature of the relation the substance of the Deity holds to the substance of the human mind, together with the mode of his support of it in its self-consciousness and freedom, is by us inexplicable. It is a mystery too great for the human understanding. Absolute idealists and pantheists have made extraordinary exertions to solve this mystery, and have published some extraordinary hypotheses.

In conclusion, we remark as to the relation of God to the world in general, that we must admit our entire ignorance of the action of creation, and our lack of precise knowledge as to the abiding relation of the divine substance to created things—mind, matter, force, space. We must hold that God is immanent in the world, and possesses absolute power over all things; and we seem obliged to hold that he is also transcendent, that he is not identical with minds and is not identical with matter, though we can not suppose there is any danger of his ever losing absolute control of all things, or of things ever slipping away from under his hand. But fully to reconcile the two characters of immanency and transcendency, to show their reciprocal limitations or qualifications, is impossible to us. Man has indeed in himself experience of immanency in and transcendency over matter, and of transcendency over other minds: but we have reasons for holding that the relation of the Divine Mind to matter and to minds is very unlike the relation of the human mind to them. God is

Anima Mundi, the soul of the world, in a very peculiar and inexplicable manner. The best conclusion on this question seems to be in general well expressed in the two extracts following from two eminent writers: "The matter seems comparatively easy if one confesses exclusively either the Transcendency of God above the world, or the Immanency of God in the world; but scarcely does one attempt to unite both ideas, when it becomes apparent that a perfectly satisfactory formula is still sought in vain. Unceasingly are we exposed to the danger, either of confounding God with the world, or of separating him from the world!"¹ "There is no doctrine of transcendence but implies at the same time some presence of God in the world, and, consequently, some immanence. There is no doctrine of immanence but implies some distinction between God and the world, and, consequently, some transcendence. Absolute transcendence would be such a separation of God and the world that they would no longer have anything in common — that God could not know the world, nor the world know God. Absolute immanence would be such an identity of God and the world that the cause would be but one with the effect, the substance with its phenomena, the absolute with the relative."²

We come now to the immediate consideration of the process and character of our knowledge of God. It should be first remarked in general that our knowledge of God is by means of our mind and of the external world as his works or creations. We know

(1) Van Oosterzee, *Christian Dogmatics*, Watson and Evans trs., I., p. 245.

(2) Janet, *Final Causes*, Affleck tr., p. 336.

God by knowing the revelation of himself in his works. Further, there are two characteristics of our knowledge of God that must be especially considered. One of these is, that this knowledge is relative. The other is, that it is partial. A primary problem for us is to show that our knowledge of God, though thus qualified, is yet true.

Let us proceed first to the discussion of the relativity of our knowledge of God. By relativity is here meant, that we know God by means of the modes of our own mind, or as he stands related to our thought; that our knowledge of him is conditioned by, or must conform to, the constitution of our faculty of knowledge. Our knowledge may then also be denominated phenomenal, being by means of the pure phenomena of our mind. It may be called as well mediate, the modes of our mind being the media. The knowledge of God, accordingly, is, as an act, of the same general character as the knowledge of matter, our fellow men, or anything distinct from consciousness. It is a complex representative mode of our mind, constructed by the intellect out of our sense, emotional and volitional experiences.

In defining the knowledge of God as relative or mediate, we implicitly deny that it is immediate. All that is immediately known in our cognition of God are the affections of our mind produced or occasioned by the objects of his creation, and therefore ultimately by him. There is no immediate knowledge of God himself. We may hold that God stands in closer relation to the mind than does any other being; that he is the creator and sustainer of the mind; that he is active below the sphere of consciousness, amidst the involuntary processes of the mind; that he is the sup-

porter of the mind in all its exertions; that he may act upon it or in it, even without the mediation of truth, for instance, in paralyzing base affections or propensities, and in exciting and sustaining noble ones. But though it be maintained that he holds this close relation to the mind, it can not be maintained that there is immediate intuition of him, that there is direct knowledge corresponding to this direct relation. We do not behold straight across, by face to face observation, the presence of the Deity. His support immediately under the being and processes of the mind is yet hidden in this immediate relation from the gaze or intuition of the mind. "No man hath *seen* God at any time."

It follows, therefore, that the modes of our mind stand nearer to us, as respects knowledge, than does God; and, taking our knowledge of him as a whole, that even the surrounding material world, as respects knowledge, stands nearer to us, for it is a medium of our knowledge of him. Some might, however, say in objection to this view, that in making the modes of the mind and external nature media of our knowledge of God, and in regarding them therefore as nearer to us in knowledge, we are putting them above God; or, "that a God who can be proved is no God, for the ground of proof is necessarily above the thing proved." This objection seems to be over-critical and unwarranted, and to militate against what must be regarded as a true process of knowledge. A ground of proof may be nearer than, and yet not "above," the thing proved.

It was remarked above that our knowledge of God is gained through our mind and external nature as the works of God. The knowledge is therefore

relative or mediate knowledge in part of one step, and in part of two steps. What we know of God through the nature of our mind, is mediate knowledge of one step; for the nature of the mind is given to us immediately in the conscious phenomena or modes. What we know of God through the external world, is mediate knowledge of two steps; for we know him mediately through the external world, which is itself known mediately through the pure affections of mind occasioned by it.

We must now consider the important question, What evidences of the existence and character of God can be found in the mind of man and in the external world? It is not our design here to enter into a minute and full discussion of these evidences, since there seems to be no special call for this. Some discussion of them, however, is demanded; but the chief question for our consideration will be the possibility of truly knowing such evidences as may exist.

First, of the mind. The modes and processes of the mind, taken in their own nature with the subjective laws that govern them, taken apart from the material world, give evidence of the intelligence of the Creator. The modes of the mind are astonishing to the mind itself, in the character of distinct modes, in their rise into consciousness, in their order of succession as governed by the laws of association and as governed by the law that emotion follows cognition and volition emotion, by which a thought passes gradually to embodiment in action. There are remarkable progression and order in our knowledge as it advances from the simplest cognition on to perception, imagination, and the highest and noblest generalization. These processes and experiences indi-

cate the intelligence and design of the Being who has made the human agent capable of them. He that created the mind and the conditions of knowledge, shall he not know and purpose?

Further, the contrast between the voluntary and the involuntary within the sphere of the mind, the contrast between effects of our will and effects that are not of our will, suggest the existence of a Supreme Will. We are conscious of a certain measure of control over the mental phenomena. Again, we are conscious of the great portion of these phenomena without the consciousness of any control or production. In this contrast of the voluntary and the involuntary within the mind, we have reason to infer a will distinct from our own as the cause of the involuntary,—of a will much greater than our own as the involuntary of the mind is much greater than the voluntary. Being clearly conscious of our own volitional power and of its limits, we infer a will active upon these limits, and deduce the supremacy of this external will by a comparison of effects.

In the external world are many striking proofs of a Supreme Being of intelligence, wisdom, design and power. First, “in the very elements of matter; in the law of definite proportions by weight; in the law of multiple volumes; in the peculiar quiescence of some of the most abundant materials; in the alternation of perfect quietude and incontrollable fury, displayed by oxygen; in the value of both moods to human life; in the instability of nitrogen, and its consequent adaptation to form organisms, of unstable equilibrium, as a residence of our incarnate spirits; in the presence of polarities, producing definite crystalline forms, marvelously exact in their conformity

to geometrical law,—in these, and in various other peculiarities of inorganic matter, Professor Cooke shows that numerous lines of induction run together, and confirm beyond reasonable cavil the conclusion that, in the very constitution of matter itself, we have abundantly demonstrative evidence that it is the work of a far-seeing, wide-reaching Intelligence, immeasurably exceeding and yet including our wisest conceptions of geometric and physical fitness.”¹

The law of gravitation, that every material object attracts all others with a force varying directly as its mass and inversely as the square of its distance, evidences by its exactness a thinking Cause. The astonishing order and regularity of the solar system under the governance of this law,—the arrangement and adaptation of the members of this system as respects magnitude, weight, distance, motion,—declare an intelligent and mighty invisible Creator and Ruler.

In the development of the world and the universe, so far as this is known and fairly conjectured;—in the total progression as having attained the striking relations and order of the celestial bodies; in the successive stages of the development of the earth and in the perfection of constitution, and perfection of adaptation to the surroundings, characteristic of the organisms in which the succession of life on the earth culminates;—are evidences hard to resist of an omnipotent Power working with intelligence and purpose.

Our ability to understand the order, beauty, harmony, progression, of the works of nature and tendency to interpret them as the products of supreme

(1) Hill, *Postulates of Revelation*, pp. 77, 78.

intelligence, is doubtless dependent in part upon the comparison we make between the works of nature and the orderly and designed works of the human mind. From our own experience of the production of such works, and from our experiences amidst many human works which we know to be the products of human purpose, we are led to the thought and assumption of a competent personal Author for the works of nature. Our perfect familiarity with and confidence in the connection between man's works and man's designs, cause us to infer with great confidence a personal Designer for the remarkable order and contrivance seen in nature. Further, on the ground of this comparison between human works and the works of nature, we are able to infer an intelligent Author who not only resembles the human agent, but also greatly differs from him. The resemblance between these two classes of works calls for a resemblance of authors, but their great difference calls also for a great difference of authors. The works of nature reveal a depth and perfection of thought and design that illimitably surpass what the works of man reveal. The former have also an extent that illimitably surpasses the extent of the latter. We are led, therefore, to infer a personal Designer who illimitably surpasses man in intelligence, wisdom, and power. But a more important difference still remains. Man acts on the outside of his materials, and his works are external to himself. He clearly knows himself to be only a designer and not a creator. But in the works of nature, there is such close connection between substance and form, such absolute penetration and possession of the materials by order and design, we

are warranted in inferring that the Designer of the cosmos is the Creator of its substance.

Our knowledge of God as the intelligent and wise designer and originator of nature is, in itself, or considered as an act, like our knowledge of everything distinct from our consciousness, a complex representative mode of our own mind. The intellect qualifies, expands, exalts the qualities of man into a compound representation of a personal Being so much and in so many respects greater than man, in the same manner as it constructs a representative knowledge of the material universe, which, as known, is so many times more extensive than the human body, and of a duration so many times longer than that of our personal experience.

Turning from the discussion of the evidences or of the revelation of the existence and attributes of God given in the mind of man and in the external world, let us consider the fundamental question, whether what we have been regarding as perceptions of this revelation constitute true knowledge? Have those inferences which we draw from the properties and activities of the human mind respecting the character of God any real foundation? Have they such foundation as warrants the belief that they really concern the attributes of a God independent of our thought and of him as he exists in himself? Similar questions are pertinent to the inferences we draw from the order, harmony, regularity and progression of external nature. Have these inferences a sure foundation? are they true conclusions as to a God independent of our cognitions and of him as he exists?

Many have contended that because our knowledge

is relative it can not be a true perception or representation of anything outside and independent of our thought. It is supposed that, for this reason, we know nothing even of our own mind as it exists in itself; that we know nothing of the external world as it exists in itself; and certainly, therefore, can know nothing truly of a God back of the mind and the external world and revealing himself in them. Many tacitly assume that, because we can know only according to our faculty of knowing, because our knowledge is determined by the constitution of our mind, a true cognition or representation of any object beyond, and not constructed by our thought, is quite impossible; all that can be known are the phenomena, the mental affections or states of consciousness, produced by unknown and unknowable objects. Speaking of the relativity of knowledge, Sir W. Hamilton says: "Our knowledge of mind and matter can be nothing more than the knowledge of the relative manifestations of an existence which in itself it is our highest wisdom to recognize as beyond the reach of philosophy."¹ He says again: "Our whole knowledge of mind and matter is relative — conditioned — relatively conditioned. Of things absolutely or in themselves, be they external, be they internal, we know nothing, or know them only as incognizable; and we become aware of their incomprehensible existence, only as this is indirectly and accidentally revealed to us, through certain qualities related to our faculties of knowledge, and which qualities, again, we can not think as unconditioned, irrelative, existent in and of themselves. All that we know is therefore phenom-

(1) *Discussions*, p. 22.

enal — phenomenal of the unknown.”¹ These declarations are but a restatement of a fundamental principle of the Kantian epistemology.

It was above accepted and posited as a primary fact, that our knowledge of God, as of all objects distinct from our mind, is relative, phenomenal, mediate, in the sense that we know them only through the phenomena or modes of our mind, and that the cognitive modes are what they are primarily by the constitution and sub-conscious activity of mind. Of mind, however, it was maintained that our knowledge is not in the same manner relative and mediate; but is rather, because of the peculiar relation the mental modes hold to mind, immediate and absolute; meaning by absolute, not the knowledge of a thing as existing out of relation to everything else, but as existing independent of our thought. We know mind indeed only in the conscious modes, but these modes are inseparable from mind,—they are the attributes of mind; and mind is given immediately in its modes as it exists in itself,—mind and modes are inseparable in knowledge as they are in existence. Percepts and other conscious modes are not a mere play of phenomena or appearances which are detached from mind, and have nothing in them corresponding to the real properties of mind, or have attributes that are the direct contraries of the real attributes of mind. They do not form an arbitrary series in which, to use the words of Hume, anything may follow anything. The extension and duration of percepts, and the consciousness of power or causation, are not phenomena related to, or forms lying in or created by, an exten-

(1) *Discussions*, p. 597.

sionless, timeless and powerless mind; but are forms or attributes belonging to our thought because our thought belongs to our mind, because it has its ground in, and immediately reveals the properties of, real mind. Thought is not independent of mind, but is what it is, and is kept regular, uniform, permanent, by the permanent properties of mind. Not thought, but substance, is the original or prius in the human mind; and thought is so far produced and determined by, is so dependent upon, the substance, that in its attributes it necessarily expresses attributes of the latter. Therefore, in the cognition of subjective extension, duration and power, we have immediate knowledge of the properties of the mind as it exists in itself.

On the basis of the fact that our knowledge of the mind is absolute, that is, is of mind as it exists in itself, has the claim justification that we have true knowledge of God through the character of our mind. Having absolute knowledge of the mind which bears the evidences of God's intelligence and will, we have true knowledge of God so far as he is therein revealed. Knowing the work of God as it exists in itself, we know in like manner the marks of his character as they are impressed upon his work. Our thought does not make the mind and the evidences, but is itself made by them as they are constituted by God, and is on that ground a true representation of the attributes of God.

Our knowledge of the external world is, in contrast with that of mind, strictly relative and mediate; being by means of the pure modes of our mind, which are not immediately related to outer objects as they are to mind, but are separated from them by a cleft.

and in their character are determined chiefly by the constitution and action of the mind. They are chiefly but not wholly determined by the mind; for the mind is passive to the impressions of external objects, and its knowledge of these objects, while a pure mode of itself, is to an extent, as already explained, determined by them.

We have above noticed how the extreme advocates of the relativity of knowledge emphatically deny the possibility of absolute knowledge, that is, the possibility of knowing any being — mind, matter, God — as it exists in itself independent of our thought. But they put an unjustifiable limitation upon knowledge. Our external knowledge, though relative, is still of the absolute. Cognitions of outer objects, while in themselves pure modes of mind, yet involve, as true representations, a knowledge of objects as they exist, — as they exist in entire independence of our thinking or making. Relativity of knowledge does not exclude, but admits, absoluteness. The two are not contradictory of one another, but coëxist in harmony.

Our precepts of objective reality are true representations of it so far at least as its properties are like properties of mind. The extension and duration of our percepts truly image the extension and duration of objects as they are in themselves. Our knowledge of space and of the motion of bodies is a true picture of them. By means of our pure subjective representations, we know these realities as they exist independent of our representations. But the fundamental condition of the true representation of external reality is the fact that our percepts are, first, revelations of the real properties of mind. Percepts, as we have before contended, are not appearances or phantasms

so loosely related to mind that they reveal nothing whatever of mind or its properties as these are in themselves. They are not held at a distance, so to speak, by the mind, as a floating bladder is held with a string by a child. They are immediately related to and dependent on mind, and therefore necessarily manifest the properties of mind. Being the manifestations of the properties of mind, they are capable of being and are true representations of the like properties of external realities.

Having, then, a relative knowledge, which is also an absolute knowledge, of external realities, knowing them as they exist in themselves and in independence of our thought, we can know in the same manner the evidences of the intelligence, purpose, power, of the Creator borne by these realities. The beauty, order, regularity, adjustment, which objects have in their spatial and temporal qualities and relations, including their motions, and in their action upon one another, are known as they actually exist; and so far as they express the attributes of God, so far we have a true representative knowledge of these attributes. The conformations, adaptations, fitting of means to ends, among objects small and great, in times short and long, are not fictions of the mind, or projects of its laws and forms, but objective realities, represented by the mind as they exist; and from the basis of this real existence, known as it is, we can reason truly to the character of its Maker. From these facts pictured by the modes of the mind and pictured truly, and from the knowledge of real mind as a unit, we pass to their Author of supreme intelligence and power. Knowing the things in their real nature, in which he reveals his attributes, we know these attributes themselves in

their real nature, as far as our knowledge extends. Our notion of things being true to the things, is true to the divine nature and attributes manifest in, or inferred from, them. But if, on the contrary, our knowledge of the mind were merely symbolical, as some suppose, of an unknown reality, and if our knowledge of the external world were more remotely symbolical of an unknown reality, then our notion of God, constructed from these notions, could only be very remotely symbolical of an unknown reality. The supposed conditions, however, being contrary to the facts, the apodosis is also contrary to the fact. The truth of our knowledge of God depends entirely on the truth of our knowledge of his works. The works of God are independent of our thought; they determine it, and are not determined by it; and the latter is a true cognition of these works and of the attributes of God revealed by them.

We now pass from the discussion of the relativity of our knowledge of God to the brief discussion of the other characteristic which, as was observed at the outset, requires special consideration; namely, that this knowledge is partial. Our knowledge of God is true as far as it goes; but it is yet only partial, fragmentary, inadequate. We know God not in the infinity and perfection of his character; but only in degrees, partial exertions, finite revelations, of his attributes. This partial knowledge is, however, a true representation. Our knowledge of God is in this respect similar to our knowledge of the universe. We do not cognize, we can not conceive, the universe as infinite or as absolute, here meaning by this latter term irrelative or unconditionally limited. We know only a finite and relative portion of the universe; but

yet our knowledge of the portion is as to its primary properties, a true representation of it as it exists in itself and in independence of our mind and thinking. Our intellect "is weak, but not deceitful."

Contrary to the view that our knowledge of God, though partial, is still genuine knowledge, some have argued in effect that, as we can not know the infinity and perfection of God, we can not have any true knowledge of him at all,—to us God is altogether unknown and unknowable. A notable example of this dialectic is the philosophy of the Infinite and Absolute, or the Unconditioned, as propounded by Sir W. Hamilton, and as applied, especially in theology, by Dr. Mansel and Mr. Spencer. This philosophy sanctions such lean and negative conclusions as: "A God understood would be no God at all;" "The last and highest consecration of all true religion, must be an altar '*To the unknown and unknowable God*';" God is an unknowable infinite power which may be unconscious; "Does it not follow that the Ultimate Cause can not in any respect be conceived by us because it is in every respect greater than can be conceived?"

This agnostic theory errs in considering too exclusively the infinity of God, or in regarding him as "nothing but infinite." But why may there not be degrees in the attributes, in the intelligence, the power, of God, or rather finite and relative exertions and manifestations of them, and why may these not be truly known? We certainly must not depreciate the infinity of God, nor the greatness of the knowledge of it; notwithstanding, the chief immediate and practical matter for us in epistemology is to know or understand the adequacy in God to the conception,

creation and government of the universe as far as it is knowable; just as the immediately most interesting part of the universe itself, how extensive soever the universe may in itself be, is that part of it which we can and do know; and in any degree that we cognize this adequacy, to that extent we have a real knowledge of God. We know not the law of gravitation in the full power and range of its operation in the universe; but we clearly perceive its remarkable operation in the part of the universe cognizable by us; and so far as we perceive this, so far we really enter into, we truly cognize, the thought and resolution of God. Again, our knowledge of God as partial, is comparable with our knowledge of space. We can not cognize or conceive space as infinite; but we cognize finite and relative spheres of space,—we know them as they are, in their real extension and permanence. Our inability to know the whole certainly does not deny to us the ability to know a part. We can not conceive the power of God in its total intensity and total range; but we can to some extent truly represent it as it is revealed in a finite sphere and in finite expenditure. The assumption that ignorance of the infinity of God involves total ignorance of his character, is a phase of the singular zeal and reasoning of some philosophers to get rid of, to disown and deny, knowledge that is possessed by every man.

Many influential objections have been made to all theories that contend for any measure of true knowledge of God as the intelligent creator and ruler of the world. Let us proceed to consider several of the principal of these objections. What I have to add in illustration and support of the above doctrine of

the cognition of God will be given by way of answer to them.

Among the chief of the objections spoken of are the following: *First*, there is no evidence, or but little evidence, of finality in nature. *Secondly*, the evidence of finality can prove at most only an architect or designer of nature, but not a creator. *Thirdly*, our idea of God is merely anthropomorphic. *Fourthly*, it is only a regulative principle, or the highest unifying principle of our thought, and can not be rightly held to have an objective reality answering to it.

(1) The most serious opposition to the existence of finality or design in nature, particularly in organic nature, comes from what is called in general the Development Hypothesis. According to the Darwinian principle of Natural Selection, the existence of species and the adaptations and correlations within organisms, and between organisms and their external conditions, are not the work of special creation, and have not continued the same or much the same from the first, as has been commonly supposed; but are the result of gradual but great variations and evolution of organisms. It is admitted that these variations are themselves the product of interacting laws; but many deny that these laws give evidence of a presiding intelligence aiming at definite ends. The origination of variations, it is said, does not evidence intelligent production; and the lines or courses they take are not determined definitely or irresistibly by a directive principle within, but by outer unthinking conditions. Development as presented by some writers is an astonishing succession of accidents.

The theory of selection begins by assuming a few very low and simple original forms of life. These are

endowed with great power of multiplication. The area and means of sustenance being limited, multiplication leads to a struggle for existence. This struggle may also be occasioned by any change, sudden or gradual, in the external conditions of life, as temperature, food, range. It assumes further the principles of heredity and variation; that is, that descendants resemble their parents to a degree, inheriting any perfection or imperfection of organ and possibly of habit possessed by the parents; but also vary from them by original characteristics. Now in the struggle for existence, arising from the above mentioned causes, those organisms will survive, or will be selected by nature, which receive by variation and inheritance some modification of part or parts, or modification of function, that brings them into more perfect harmony with the surroundings and gives them an advantage over their fellows. Thus, it is supposed, by a remarkable coincidence of changes, have arisen the present great variety of species of organic life, with the surprising perfection and correlation of parts revealed by distinct organisms, and adaptation to the external media or surroundings.

The theory can not rightly be supposed to exclude finality or the control of an intelligence working to preconceived ends. All that artificial selection accomplishes by the intelligent and persistent labor for certain results, can give little confirmation to the view that the selection of blind nature, or many fortuitous concourses of changes, internal and external, can account for the most remarkable characteristics of organisms, and for the vast differences among the kingdoms and the species of the world of life, as the difference between even the highest brute and man.

It is hard to see how any considerable, and especially any correlated or parallel, changes could be produced or preserved by the accidental, and not predetermined and regulated, coöperation of processes; or how any slight variation, especially the rudiment of an important organ, as the eye or wing, should be preserved and increased, and not dissipated, in descent, before it would become great enough to be of any considerable advantage in the battle for life.

The theory of development, instead of shutting out the evidence of a directing, designing, conscious Intelligence, rather would appear to require such an intelligence as much at least as the doctrine of special creation. Such an intelligence is required to account for the origin of life and sensation, for the origin of variations which the doctrine of selection assumes, and for the origin of the outer conditions of life and the order of changes in these conditions. To lead organic life along a line of development by means of, or in accordance with, a succession of changes in the outer conditions of life, supposing that all was effected through the operation of laws, is as intellectually high a work, as a series of creations of special organisms in harmony with outer conditions. That the earth has passed from its original chaotic state through a succession of changes and convulsions to its present quiet and habitable condition, and that organic life has arisen in harmonious development through a series of species to the race of man endowed with remarkable physical, intellectual, and moral powers so far above the mere needs of physical life, fitting him to inhabit the earth in highly organized communities,—that this all happened without the design and guidance of a superior intelligence

working through or in the laws that are said to have brought it about, and causing species to rise out of species through variations proceeding in definite directions and not in all directions indifferently, is very improbable. Rather, the process of Development seems to constitute important ground for an inferential knowledge of a Supreme Intelligence. Further, our direct and certain knowledge of finality in human action, will of itself always lead to and justify the inference of finality in the operations of nature.

(2) The second objection to be considered bears especially against the creatorship of God and possible knowledge thereof. It is said that the marks of design in nature, and all the evidence given in our experience, prove at most only the existence of a Supreme Artificer or Organizer, but not a Creator, of the world; and that to assume or infer that the Organizer and the Creator of the universe are one and the same intelligent first cause, is an illogical and violent advance beyond experience and proof. Supporters of this objection sometimes mark the limits to both the power and intelligence of the Supreme Being.

That experience affords at most proof only of a Supreme Architect of the universe, is a definite dogma of Kant; and, among later writers, has been vigorously upheld by Mr. J. S. Mill. "According to this [the 'physico-theological'] argument," says Kant, "must the conformity to ends and harmony of so many facts of nature prove merely the contingency of the form, but not of the matter, *i. e.*, the substance, of the world; for to establish this latter, it would yet be necessary to prove that the things of the world

were in themselves, according to general laws, incapable of that order and agreement, if they were not, in their very *substance*, the product of supreme wisdom; but for this quite other grounds of proof would be necessary than those from analogy with human art. This proof could therefore, at most, establish the existence of an *architect of the world*, who would always be very much restricted by the capabilities of the matter with which he works, but not of a *creator of the world*, to whose idea all is subject; but this is far from being sufficient for the great end which men have had in view, namely, to prove an all-sufficient First Being. If we would prove the contingency of matter itself, we must have recourse to a transcendental argument, but this is just what was here to be avoided."¹ Mill, arguing on the lines of Kant, says: "There is in Nature no reason whatever to suppose that either Matter or Force, or any of their properties, were made by the Being who was the author of the collocations by which the world is adapted to what we consider as its purposes; or that he has power to alter any of these properties."² "The fact of experience, however, when correctly expressed, turns out to be, not that everything which we know derives its existence from a cause, but only every event or change. . . . There is in every object another and a permanent element, viz.: the specific elementary substance or substances of which it consists and their inherent properties. These are not known to us as beginning to exist: within the range of human knowledge they had no beginning, conse-

(1) *Kritik d. r. V.*, pp. 425, 426.

(2) *Three Essays on Religion*, (Theism,) p. 178.

quently no cause; though they themselves are causes or co-causes of everything that takes place. Experience therefore affords no evidences, not even analogies, to justify our extending to the apparently immutable, a generalization grounded only on our observation of the changeable."¹

It is commonly admitted that man interprets and understands the order, adaptations of means to ends, and changes in nature through his own art and through his own powers. Reasoning from his own thought and execution of design, he infers an Intelligence as the author of the design manifested in nature. But in the comparison of his own work and nature's work, he cognizes both resemblance and difference. He cognizes difference in cognizing resemblance. He perceives a great difference in complexity and magnitude between his work and that of nature. On the ground of this, he infers that the Designer of the world is an immeasurably wiser and more powerful being than himself. This is allowed to be a legitimate induction.

But some go farther than this. They conceive that the Being who designed nature also created it; that he who fashioned the cosmos made the matter and force out of which it is fashioned. The faculty and the fact of this procedure in inference are denied by no one; its legitimacy is by some vehemently denied, as by the two great writers just quoted. But contrary to them, something may be said for its legitimacy; and their view may be shown to be gratuitously skeptical.

The occasion of inferring that the Creator and

(1) *Three Essays on Religion*, pp. 142, 143.

Designer of the world are one and the same being, or of reckoning to nature's Designer, and denying to man, the attribute of creatorship, is chiefly the perception of his perfect mastery over the materials, as compared with that of man; and of the immanency of his design, or his perfect penetration and internal possession of all known substance

How limited in range is man's power over matter, and how, as a designer, he works merely on the outside, is acknowledged by all. The difference in this respect between his and divine art, is manifest and immeasurable. The human body, the material sphere in which human and divine actions come into the most direct relation and comparison, shows this. Man possesses much control indeed over his locomotive organs and uses them as instruments; but over the internal vital forces and processes that develop and sustain the separate members and the whole organism, he has very little control. He knows but little about them. And of his whole being, its vital laws and processes, its psychical laws and fundamental processes, man easily and clearly perceives that his command is almost as nothing, both as to comprehension and penetration, compared with that of the divine Organizer.

But these peculiar characteristics of order and planning of the Supreme Designer are manifest through the whole universe, as far as it is known, from center to circumference, from the least part and motion to the greatest. From the supposed attractions, repulsions and rhythms of atoms, the definite proportions of chemical compounds the vibrations of the subtlest substance or ether, and the minute and invisible working of vital force, at the one extreme,

to the nicely regulated movements of the mighty masses of the heavenly bodies, at the other extreme, there seems to be the reign of one government of perfect unity. The least vibration and the largest revolution appear to be but actions of one system. Now this perfect possession and control of matter, force and motion, small and great, which distinguishes divine art in antithesis with human art, occasions, and not only occasions but justifies the supposition that the Designer of the world is its Creator. Creative power is not inconsistent, but consistent, with such regulating and organizing power. Such mastery, in its immanency and comprehension, of the materials of nature, can not be said to be a work of lower rank, a work of less intelligence and less power, than creation. A being that can do the one might do the other. The Organizer of the universe may well be the Creator of its matter, its force, and the space which gives them room for existence and motion.

Do we then, in supposing the architect and creator of nature to be one and the same Being, really go beyond experience? We do go beyond our experience of power; for man has no creative power, and therefore has no personal experience of creating. But if we go beyond our experience of power, we are incited and led to it by our experience of perception. In the works of nature we clearly perceive the thorough internal and external control which the Designer has over its substance and forces. The penetration and command of the elements of nature, by the Power that produces the order and adaptations among them, appear to be perfect; and in our clear perception of these facts is implied the clear percep-

tion by contrast of the very superficial and very contracted power of man over the elements. In human art the separation of form and matter is perfectly distinct. Man knows with certainty that his power is limited to making a change of form. But in the works of nature we perceive no separation of form and matter; rather we perceive their perfect and perpetual junction; and may legitimately infer, therefore, in contrast, the perfect union or identity of the Creator and Architect of nature. Mr. Mill says: "The world does not, by its mere existence, bear witness to a God; if it gives indications of one, these must be given by the special nature of the phenomena, by what they present that resembles adaptation to an end."¹ To this the reply may be made: we never know the world in "its mere existence," apart from internal order and adaptations; we know existence or matter only in the closest union with order and design; and therefore the argument from causation and from design is one and inseparable. Matter and force are known only as penetrated and organized by design of less or of greater comprehension. They are known only as they are employed apparently by a designer of perfect or altogether superhuman power; and we have no ground for supposing the "mere existence of the world" ever was a fact apart from inclosed order, adaptations and purposes. To distribute the substantial elements and the organization of the world to different origins is itself more clearly a step beyond or contrary to experience, than to ascribe them to one and the same origin. Since we always perceive substance and form or regulation united in

(1) *Three Essays on Religion*, p. 153.

nature, to assume that they were ever apart is an assumption contrary to the fundamental principles of experiential knowledge. It is attributing a human limitation to the Supreme Being which the clearly discoverable difference between human and divine power in adaptations and regulation seems positively to forbid. We cognize things separated from human design, but never from divine design; and what we always perceive to be so united in existence we can not affirm to be different in origin. This severance of form and matter in nature stands on a level with the Kantian severance of form and matter in perception.¹

It has been contended further, in direct contradiction to the conclusion we have here reached, that the argument from design and experience does not only not justify the assumption of a God other than a designer, but that it does not justify the assumption of a perfect designer: that God's power is not only limited, in that he is a designer and not a creator, but that it is further limited in that he is deficient as a designer, lacking either perfect power over his materials or perfect intelligence in the use of them, or both. Reference is made to supposed defects in animal organisms, as the human body; to sad calamities;

(1) Considering the fundamental principles of the philosophy of Kant and of Mill, there appears something singular in the fact that either of them should have thought it necessary to separate the organization and the creation of the world, as to origin. For why could not the same Being easily create, as well as construct, the phenomenal world of the former; and likewise the permanent possibilities of sensation or consciousness which constitute the world of the latter? It is difficult to see how philosophers who are essentially monistic in one department of their philosophy can become so extremely dualistic in another.

and especially to the presence of evil in the world with its attendant degradation and misery.

Even the use of means is regarded as, in itself, an evidence of limited power. Says Mr. Mill: "It is not too much to say that every indication of Design in the Kosmos is so much evidence against the Omnipotence of the Designer. . . . The employment of contrivance is in itself a sign of limited power."¹ These remarkable statements are accompanied with the assumption that the very use of design or contrivance implies the necessity of its use. But we may well ask, Can any one be sure that it is impossible for an omnipotent being to adapt means to ends, to postpone one thing to another, to condition one thing on another? If the employment of design be really an indication of the limitation of power, can it be truly said to be an indication of anything more than a voluntary limitation, than the employment of partial power when full and direct power might have been employed if the agent had seen fit to employ it? Could a being be omnipotent who could not employ contrivance? A person of the critical mood of Mill might yet ask, If the use of contrivance were not necessary to the Supreme Intelligence, why then does he use it? The only answer that can be made is, no mortal can adequately tell. If the use of contrivance be really necessary to the Supreme Being, then we must admit his power is limited, is limited by that necessity whatever be its nature. But until it shall have been proved that it was necessary for the Supreme Being to employ contrivance, or that an omnipotent being could not

(1) *Three Essays on Religion*, pp. 176, 177.

employ it, we may hold at least that contrivance is no more a sign of limited than of unlimited power, or that it is only a mode in which omnipotent power chooses to exert itself. The Supreme Intelligence being so far superior to man, as all who admit a Supreme Intelligence allow, we must judge with reverence and reserve of the degree and use of his power.¹

The question of the existence of evil in its relation to the question of the limitation of God's attributes, presents the greatest difficulty to the orthodox theist. Mill says that "if the maker of the world *can* all that he will, he wills misery, and there is no escape from the conclusion."² But there are facts in the case which show that the presence of evil with all its train, is not in absolute conflict with the existence of a God of infinite power, wisdom, and righteousness.

A dark and depressing picture can no doubt be drawn of the degradation and wretchedness in which a large portion of the human family is found, if these facts be taken apart, as some do take them, from the freedom, probation, and responsibility of men. If men be not free and responsible, then there seem to be grounds for arraigning the divine government. But if men are free, not free according to some theological and metaphysical fictions, but really free; and if it is an indisputable fact that very many men in all

(1) It is easy, in turn, to ridicule, as Kant does, "complaints of the limited nature of our faculties, and the seeming humble confession" that questions are beyond the power of reason, and the "pretext of necessary ignorance and impenetrable obscurity." Such confessions, however, we are sometimes by the force of facts compelled to make; and they are surely more commendable than assumed self-sufficiency.

(2) *Three Essays on Religion*, p. 37.

ages have perversely resisted instruction in righteousness and the claims of righteous laws which, it was manifest, must have the approval of the Supreme Being; then the picture is still dark enough, but there should be a limit to pretentious judgment on the dynamical and moral government of the world. If all or most men should use their energies and known and available means to become what they might, and to do what good they might, the greatest evils and miseries of this world would, we may believe, in a large measure speedily disappear.¹

The conclusion to which we come from the preceding considerations briefly summed is this: The evidences of design show the existence of a Supreme Being not limited to the ability to design and fashion, but possessing ability to create. To assign the creation and construction of the world to different origins is the distinction of a metaphysic more subtle than logical and consistent. Opposed to the distinction is the ever-abiding association between the elements of the world and regulated change and design, revealing the absolute interpenetration and mastery of these elements by the Designer. The unvarying experience of the association of matter with order and purpose in the works of nature justifies the assumption that the Creator and the Designer of nature are the same. Again, the employment of contrivance does not prove its own necessity. There is no evidence that an omnipotent being can not use contrivance, or

(1) "No one whose opinion deserves a moment's consideration can doubt that most of the great positive evils of the world are in themselves removable, and will, if human affairs continue to improve, be in the end reduced within narrow limits." (Mill, *Utilitarianism*, p. 21.)

exert his power in varying degrees, and in acts which are successive or mutually conditioned. Finally, the existence of evil in the world, the darkest fact of its government, does not show that the Supreme Being, whether regarded only as an architect, or as both creator and architect, is defective in power, wisdom, or righteousness.

The question yet remains, whether we can logically stop in the regression of causes, with one Supreme Intelligent Cause of the being and structure of the universe, and are not compelled to go on, by the same mode of reasoning by which we reach this Cause, or by the "principle" of causation, to a cause back of the supposed Supreme First Cause, and so *ad infinitum*. There is a tendency in the mind towards the assumption of an infinite series of causes. The answer to this question depends upon the value or character to be imputed to this tendency, and in general to the tendency to think of a cause.

The principle of causation has been variously defined and characterized by psychologists. By many it is held to be a subjective *a priori* necessity of thought. It has been embodied in the declaration, Every event must have a cause. One may properly ask with reference to this definition, whether volitions must have a cause in the usual meaning of the word? Again, the principle has been embodied in the declaration, Everything that begins to be has a cause. This definition presupposes another very important question answered, viz.: what things have had a beginning? have matter, force, space?

The tendency to think of a cause, *i. e.*, antecedent productive power, for every event, can not rightly be held as an *a priori* necessary principle. It is, as re-

marked before, a tendency of thought wholly arising from experience — from experience of causation in ourselves, and from the application of our subjective experience in the interpretation of objective events and existences. We properly and habitually think of every event as having an antecedent and productive cause; and this movement of thought can be justified until it reaches an Intelligent First Cause. When it has gone so far, there is no doubt an impulse to go farther; but this is only an overleaping from an acquired habit of thought. The tendency to go on continues without sufficient justification. We may consistently and rightly stop in our regress with a Supreme Intelligent Cause of the matter and form of the universe. At any rate, to stop with such a result is well for minds that, because of their limitations, can not really go farther.

(3) The third of the objections above specified, an objection made especially to the view that our idea of God truly corresponds to an objective reality, is, that this idea is anthropomorphic. By this is meant that our idea of the Author of the order and adaptation in nature is formed from the attributes of the human mind; that we interpret nature by our own powers of arrangement and of the use of means; that, therefore, our idea of God is but the idea of an enlarged man, and can be at best only a mere symbol, and not a true representation of his nature. According to Spinoza, "a triangle, if it could speak, must in like manner say that its God is triangular, or a circle that the divine nature is circular."

Our idea of God is doubtless anthropomorphic; but this is no more true of our idea of God than of our idea of every other objective reality, matter,

force, other human beings; for our ideas of all objective beings are pure complex modes of our own mind, constructed by our intellect out of simpler ones. These complex modes are alone known immediately; but being representatives of objective realities, they afford us a mediate knowledge of these realities. Our idea of God does not differ essentially, in this respect, from our idea of any object; and thus all our knowledge, from that of a piece of matter up to that of the Creator, is anthropomorphic, so far the doctrine of *Homo Mensura* must be allowed to possess truth. But while this is indisputable, it does not imply that our knowledge or representation of God is not at the same time, as far as it goes, true to him as he really exists, but merely symbolical. If our knowledge is only representative, by modes of our own mind, it is yet truly representative, it reveals him in his real character. Both our representation of the works of nature, and the interpretation we put upon them as to their Author, may be so far true to the reality. Idealists assume that an idea which is anthropomorphic, or a pure subjective construction, can not be a true representation of an objective thing. This assumption is a radical error, against which we have already contended.

It has been above shown how our knowledge of material objects and of the material universe, though entirely mediate, through the pure complex modes of the mind, can yet be and is a true representation as to certain clearly distinguishable attributes; that the mind has absolute or real knowledge of external extension and duration, and of the relations of objects and events implied in coëxistence in space and succession; that on the basis of a limited real knowledge

gained by perception, the mind can construct a trustworthy representation of the vast extent and protracted duration of things, beyond the reach of our senses and the duration of our personal experience, and of the relation of things in the great outer regions of space and time.

It has been also shown how, by the same principles of mediate perception, we acquire a trustworthy, real knowledge of our fellow rational beings. The possibility of a true representation of these external realities, and the means of knowing that the representation is true, without the power of immediate comparison, has been sufficiently exhibited. Under all, as a necessary condition, is the actual resemblance, in some points, between the mind and the things known. Thus our knowledge of external being is both relative and absolute. We know only through the modes of our mind; our knowledge is therefore relative. But these modes do not distort or misrepresent, but truly represent, external being; our knowledge is therefore also absolute or real. We indeed can only know things through our simple or complex representations of them; but these representations are true to things as they exist in their distinction and independence from the mind.

On the basis of these principles we can acquire a true knowledge of God as the Author of the being, order and design of the world; a knowledge representative through our mental modes, yet truly representative as far as it goes. Though our thought is anthropomorphic, it is not an arbitrary, accidental subjective appearance, having no certain relation to reality; it is not a creation of the mind that manifests not the real properties of mind; it is not necessarily a

misrepresentation of reality, or incapable of telling anything about it, or at most only the dimmest symbol of it. Our thought is directly related to and determined by the constitution of the mind as this was created by God, and as it exists antecedently to thought; and primary properties of mind are directly revealed in thought. If human thought were not so related to a permanent reality, it would not exist. It could not create itself; and no subject could produce it with all its properties absolutely unlike, absolutely contradictory to, the subject's own. Further, as thought is a manifestation of the properties of one permanent reality of the world, it therefore truly represents other permanent realities as far as they have resemblance to the former. The thought of man truly conforms to his own being, and therefore also truly conforms to outside being; because of its close relation to reality, it is not deceptive or like a self-created prodigy, but is a true revelation and representation of reality. The declaration has been made that "it is man's *original method of knowledge* to import his own being into all else, and in that way to make everything intelligible to himself,"¹ and that his knowledge is therefore to some extent illusory or mythological. External things are intelligible to a man because his thought, based on or determined by his own being, is capable of representing other being. He does not really import his being into other things; but his being by its conscious modes is able to picture other things in some of their chief properties.

Our thought of God is indeed anthropomorphic, that is, it is human thought; but this fact does not

(1) Kaftan, *Truth of the Christian Religion*, II., p. 46.

require us to accept the unreasonable conclusion that our thought is therefore necessarily unlike the thought of intelligent beings of a different grade; that such beings must form a different notion from man's of the world or the works of God, and a different notion of God. It does not require us to suppose that man's thought of the world is entirely unlike God's thought of it. The more reasonable conclusion is that the thought of man and of all finite beings regarding the world has real likeness to the thought of God, because their thought has its possibility and determination in mental subjects created by him, and because all subjects and all things have been created with some uniformity. Goethe is reported to have said that "Man never knows how anthropomorphic he is." But it may be said on the other side, that because of the intimate relation of his thought to reality, man can know that his thought is true to reality. For the same reason his thought can not be in considerable discord with the thought of intelligent beings of any other rank. The thought of all intelligences must be essentially alike, because of the relation of their thought to the same properties of the world of reality. The same things are thus known by all as the same.

In opposition to some current opinions, it may therefore be held that, in worshipping a God cognized according to the method of knowledge above advocated, men do not arbitrarily "assimilate the object of worship to themselves"; they do not really humanize the Deity or deify the human; they do not bow down to an "image which their own minds have set up"; there is no real "projection and worship of self" or "self-deification." They worship a reality which in

a degree is truly represented by the modes of their own minds. The many flings of some idealistic and monistic writers against what they call anthropomorphism, are fit only when directed against childish and extravagant anthropomorphism; or are fit only if "the world is our idea."¹

If we in this manner, through the mind and the world, cognize the existence and character of the Universal Mind, it yet remains to consider a little more fully the question how the human mind rises to the high conception of God which so far surpasses its conception of itself; how the finite mind ascends to the Infinite. The mind of man is able to go below itself and above itself, to understand the nature of animals far inferior, and the nature of God infinitely superior; but this knowledge in either case can not be as perfect as man's knowledge of his equals. Descent and ascent are alike in their general character and difficulty; and are possible through the mind's power to abstract from and to diminish what it knows of itself and nature, and to expand and combine the elements of its knowledge into great wholes. Man forms his conception of the mental life of the brute by detracting from his conception of his own mental life; and to this detraction he is incited, and moved to continue to a particular degree, by comparison of the perceptible movement and general corporeal action

(1) The assertion has been made that "the evolution of philosophy has been a process of deanthropomorphization." (Fiske, *Cosmic Philosophy*, II., p. 257.) It would be much nearer the truth to say that the evolution of philosophy has been the development of true anthropomorphization, including the rejection of eccentricities and substitution of warrantable inferences for unwarrantable, and that so it will be.

of the brute with his own. The formation of the notion of God is the reverse, by the combination and enlargement of his notions of his own powers, the detraction of imperfections, and the negation of limits. We have already considered the remarkable ability of the mind to form notions beyond its actual and possible direct experience, as of spaces and of times; and to handle, by means of numbers and symbols, quantities, degrees, and combinations far beyond its power to form notions. By this same ability, the mind rises from the notion of itself and of all nature to the notion of a God proportionate to them. The truthful thought of both the small and the great in creation forms the requisite and safe foundation of our conceptions of an Author capable of producing the order and design pervading all. To think of a being of immeasurably greater power and intelligence than man, is not much more difficult than to think of the works of nature as immeasurably greater than human power and intelligence can produce.

Our notion of God, however, is not formed by simply enlarging human powers and negating human imperfections. There enter into that notion characteristics that do not belong to man; as, for instance, Creatorship. In man there is no power to create. The most that he can do is, in a limited measure, to mould material furnished to his hands. He merely plays on the surface of things that were created before him and that carry him along. He is as a particle of dust within the machinery of a great clock. Ascribing creatorship to God is then not merely removing or negating the limits of human power. We clearly and positively see an important difference between man's work and God's.

We see an important difference between the relation the form which man gives to material holds to the material itself, and the relation the form which God gives holds to the material. Man easily distinguishes between the control or mastery of matter, in its closeness, penetration, compass, and completeness, possessed by the Supreme Mind and by his own; and distinguishes himself as a finite designer, moulder, and worker in matter, from God as the great Designer and Creator of the cosmos. In the order and design in nature, there is manifest, as has been already remarked, such an intimate and constant relation between form and material, such perfect command over material, such penetration to its atoms, and unity of small and great, we can justly conclude that the author of the form is the author of the material, that God is both Artificer and Creator.

The attribute of creatorship leads us to infer important differences between the divine and human modes of knowledge. The Creator must see all things from the beginning to the end. The creature sees things only from the end. The Creator's thought of things is not, like that of the creature, excited first by the things considered as objective. There is no ground for supposing that a knowledge of a real object is necessary to the Creator's consciousness. We may rightly suppose consciousness is possible to him by subjective conditions alone, without any such knowledge. But the knowledge of a real object is not absolutely necessary to human consciousness.

To form the notion of a Creator and Contriver proportionate to the universe is not more difficult than the perception and thought of the universe.

But we can not say that God is in his attributes proportionate only to the thinkable universe. Nor can we say what he is beyond what the present thinkable universe evidences and requires. We can not assign limits to him, because we can not conceive and assign limits to his works. As to the character of God, we should, therefore, distinguish the knowable from the unknowable. We may claim to know him, or his attributes, as power, intelligence, etc., so far as the present universe reveals and requires them, or so far as experiential knowledge of the universe goes; but what the divine Being may be greater than the present and cognizable universe requires, must be classed with the unknowable. Heaping up superlatives seems not to help us here.

We remark finally, that at the basis of our cognition of God, as the condition of its possibility, is a resemblance in nature between the human and the Divine mind. Man sees the form, the adaptations, the designs, the ideas, embodied in nature, and appreciatively considers them, according to his ability, because he was created in the image of the Mind that expresses himself in the works of nature. The power of true representation of objects and events, the reflection upon them, the enjoyment of them, show kinship with the Framer and Creator of them. According to Jacobi, "In creating man God theomorphosized; therefore man necessarily anthropomorphosizes." The assumption of resemblance between God and man we can not, however, logically make a basis of proof of God's existence and character; just as we can not logically first presume God's veracity in the action of our faculties, in proving his existence. We can and do make the assumption largely

on the ground of the fact that man can form true representations of the orderly works, small and great, of the universe. This power of true representation is ground for supposing a resemblance between the Creator and the representer. The proof of God and the proof of resemblance go together.

(4) Against the theory that the idea of the Supreme Being is true to him as an objective reality, is the doctrine that this idea is no constitutive element, but only a regulative principle, of our thought, and can not be assumed to be, in any degree, a true representation of a real objective being. Kant affirms that the idea of God is one of the ideas of reason, which give unity to the unities of the understanding, but yet give no extension to real knowledge. "As the understanding," he says, "unites the manifold in the object, through notions, so reason, on its part, unites the manifold of notions through ideas, since it gives to the operations of the understanding to aim at a certain collective unity." The ideas of reason serve to impart to the notions of the understanding "the greatest unity along with the greatest extension"; but they lead entirely beyond "the limits of possible experience."¹ "The notion of a Supreme Intelligence is a mere idea, . . . it is only a schema arranged according to the conditions of the greatest unity of reason."² "We have not the least ground absolutely to assume an object for this idea."³

This doctrine is closely related to the doctrine of idealistic anthropomorphism just considered; and the answer to it is much the same. It is plainly a deduc-

(1) *Kritik d. r. V.*, p. 436.

(3) *Ib.*, p. 460.

(2) *Ib.*, p. 451.

tion by Kant from his subjective idealism regarding space and nature. If space and time be only subjective forms of sense, and have no objective reality, and if nature and its laws be only the forms and construction of the understanding, then it is but easy and consistent to conclude that the idea of the Supreme Being is as certainly a subjective form, as certainly having no objective corresponding real. If the constructions of the understanding have no resemblance to things really objective, less has the ideal of reason. Kant's mode of reasoning is clear from the following statements: "The ideal of the Supreme Being is nothing but a *regulative principle* of reason leading us to regard all connection in the world as though it sprang from an all-sufficient necessary cause, in order to ground thereon, in the explanation of the world, the rule of a unity systematic and necessary according to general laws; and is not an affirmation of an existence in itself necessary. But, at the same time, we can not avoid representing this formal principle, by means of a transcendental subreption, as constitutive, and thinking of this unity as hypostatical. For just as space, because it originally makes possible all forms, which are only limitations of itself, is regarded as an absolutely necessary and independent something and as an object given *a priori* in itself, although it is only a principle of sensibility; so likewise it is entirely natural that the systematic unity of nature can in no wise be presented as the principle of the empirical use of our reason. When we so far make the idea of an *ens realissimum* as the supreme cause our basis, this idea is represented as a real object, and this object, again, because it is the supreme condition, is represented as necessary, and consequently a *regulative* is

transmuted into a *constitutive* principle; — which supposititious principle manifests itself in this way, that when I regard the supreme being, which respecting the world was absolutely (unconditionally) necessary, as a thing existing by itself, this necessity can be comprehended by no notion, and exists therefore only in my reason as a formal condition of thought, but not as a material and hypostatical condition of being.”¹

“ I think of the relation of a being in itself entirely unknown to me to the greatest systematic unity of the universe, only in order to make it the schema of the regulative principle of the greatest possible empirical use of my reason. If we glance now at the transcendental object of our idea, we see that we can not presuppose its actuality according to the notions of reality, substance, causality, and so forth, because these notions have not the least application to anything entirely different from the sense-world. Therefore the supposition made, by reason, of a Supreme Being as the highest cause, is merely relative. This Being is thought of in behalf of the systematic unity of the sense-world; and as thought of, is a mere something in the idea. Of what it is in itself, we have no notion.”²

This doctrine and mode of reasoning requires no extended discussion. The only proper conclusion regarding it is plain and easily to be reached. First, the distinction which Kant makes between the understanding or intellect and reason seems to be entirely unwarranted. Reason is not, independently of the intellect, a source of ideas, schemata, or regulative principles, which act upon or enter from the outside,

(1) *Kritik d. r. V.*, p. 421.

(2) *Ib.*, pp. 456, 457.

so to speak, the processes of the intellect. The severance of reason from the understanding is an error like the severance of the forms of the understanding from the materials of experience. Reason and intellect are but the same faculty. The ideas of reason are but the most comprehensive ideas constructed by the intellect. The idea of God is the most comprehensive of all. The principles concerned in its formation are the same, in general, as those concerned in forming the notion of any objective reality, a material thing, or a fellow-man. The materials of this supreme idea are our notions of self and of the objective universe. Out of these notions, themselves in part compositions from our elementary subjective experiences, the idea of God is formed by the highest efforts of our intellect. In forming it, the intellect does not have, and does not need, the direction of any external, regulative, *a priori* principle or impulse. All that is concerned is our common experiential intellection.

The idea of God is a pure subjective notion, but the highest. In this we must agree with Kant. But, contrary to him, we may claim that this complex idea is a true representation of an objective reality. The validity of the idea is secured or insured, as was above shown, on the safe basis of the validity of our ideas of our own self and the external world. These latter ideas being true to the objects, so is our idea of God formed from them true to the object. There is of course implied in this that, as regards knowledge, the being of God is one remove farther from us than our own self and the external perceptible world. We know him through these realities. We know his attributes by means of their attributes. Our idea of

him is constructed by the intellect out of our ideas of them. But we may still claim, in consistency with this fact, that our idea of God is true to a real objective being. It shares in the validity of the ideas from which it is constructed. Our ideas of finite spiritual and material realities, of the physical and moral world, are true representations of the objective; and so is our idea of the Supreme Being.

No doubt, if time and space do not belong to things in themselves, but be only forms of our sensibility, exist only in subjective appearance; if material nature or the "sense-world," with its apparent order, adaptations, causal relations, unity, be "made" by the understanding; and further, if moral law rest upon, or originate from, the autonomy of the mind; then it must be granted God is but the highest unity of this subjective ideal world,—we can maintain for him nothing more than the same phenomenal and subjective existence. But if, on the contrary, time and space or extension are objective realities or properties, or do belong to things in themselves; if the material creation, as to its extension, force, causation, laws, is not merely phenomenal or fabricated by the mind, but is truly objective, or, if our understanding does not "make" nature, but perceives nature as made by God; if we know real self immediately; and if the moral laws are, as we have ground for believing, not given to man by his own will or reason, but received from without; then there is a strong and broad basis for concluding to the objective existence of an intelligent Supreme Being, who is the Unconditioned, not of thought, but of real existence, the *ens realissimum*, the highest objective reality. If we can cognize a God of thought, we can as well cog-

nize a God of things. In fine, we are not shut in to Kant's idealistic and agnostic theism, because we are not obliged to accept his theory of symbolic and creative perception and of human autonomy, from which it is primarily deduced. It may be remarked summarily of Kant's theory of the cognition of God, that, taken as a whole, in its exclusion of God from the apprehension of the cognitive powers proper; in its reference to practical reason, or to the moral law and feeling, as affording the only real proof of his being or ground of faith; in its idealism, it is a notable instance of the rise and prevalence of a complex and ingenious **fiction**.

BOOK IV.

THE EXTREMES OF KNOWLEDGE.

THE EXTREMES OF KNOWLEDGE.

CHAPTER I.

PRELIMINARY REMARKS.

Our knowledge of things, and the same whole cognitions, may be regarded, in many important instances, as consisting of two parts, differing in extent and degree,—of a nearer part and a remoter, a lower and a higher. For example, our knowledge of space may be divided into the knowledge of near space, and the knowledge of the farthest space or the illimitableness of space. Again, our knowledge of causation may be divided into the knowledge of some cases of causation, and the knowledge of the necessity and universality of causation. Further, there are stages or degrees of certainty in knowledge. In the preceding parts of this work, our attention has been confined more to the nearer steps and the common or lower properties of knowledge, and given less to its farthest reaches and highest properties, its infinity, necessity, universality, certainty. It would have been, probably, more in accordance with strict method if we had considered these advanced portions and properties, the extremes of knowledge, fully at the places in previous Books, where they naturally rose to attention; but, in conformity with, though not now assenting to, some current distinctions in psychology, and in order to

bring these advanced qualities together in discussion, I follow the course indicated.

The extreme characteristics of knowledge to which we have just referred have been, for the last century especially, matters of much distinct attention and controversy. Whole and elaborate treatises have been devoted to their separate treatment: they have occupied, in short, the most prominent place in the science of knowledge and philosophical polemics. For example, the fact of the mind's ability to think of space as extending outward illimitably, and its inability to think space away or as absolutely limited, have eclipsed in discussion the perception of the existence and the finite portions of space. The necessity and universality of the notion of causation have excited much more attention and regard than the perception of the simple nature of cause and effect, or the perception that some or many events have causes. The practical interests involved, as they have appeared to many, fully account for and require this unequal prominence given to different parts of the same whole cognitions.

Corresponding to this division in knowledge is the division in the sources of knowledge which has been most zealously argued for by a large portion of the philosophical world. These sources are, first, a lower or common one — Experience; and, secondly, a higher and far more significant one — a faculty of *a priori* principles, tendencies, aptitudes, laws, forms, intuitions, faith. Now these philosophers say that experience can give us at most only partial and contingent knowledge, or the nearer and lower division of knowledge; and that the extremes of knowledge, its infinity, necessity, universality, are contributed by

this extraordinary faculty of *a priori* active principles. Therefore our knowledges which always appear to be units or indivisible wholes, have yet in themselves a real division, inasmuch as they are compounds of contributions from these two distinct sources.

In order to discuss in a clear and satisfactory manner the worth of the division of knowledge just noticed, and especially the acquisition of the advanced portions, the extremes, of our knowledge, it will be necessary for us to consider the distinct character and capability of Experience. The following chapter will be devoted to this subject.

CHAPTER II.

THE NATURE OF EXPERIENCE.

In preceding parts of this work the nature of experience, or of experiential knowledge, has been already considered with some thoroughness as to its details. What we have to do here is to collect its main facts and principles into one view, and strictly to examine its special character and mark it off from other sources or species of knowledge.

There is no subject in the science of knowledge which stands in such need of careful treatment and precise definition as Experience. There is hardly a more uncertain term in the philosophical vocabulary than the word *experience* has come to be. There is no real unanimity in regard to it. We might be led to think that the case was otherwise, by the positive and confident manner in which experiential and *a priori* knowledge are by many compared and contrasted. But it must be admitted that not a few writers zealously support the distinction between these two species or departments of knowledge with only very indefinite notions of the nature of experience.

Leading writers have variously defined and described experience. Locke says: "Whence has it [the mind] all the materials of reason and knowledge? To this I answer in one word, from experience; in that all our knowledge is founded, and from that it ultimately derives itself."¹ Experience

(1) *Essay*, II., i. 2.

Locke evidently identifies with his "sensation and reflection," or "external and internal sensation." Kant likewise refers the matter of knowledge to experience, taking "matter" however with his peculiar meaning, as distinguished from "form,"—a distinction beyond Locke, and the basis of a marked contrast with Locke. Says Kant: "But although all our knowledge begins with experience, it does not therefore follow that all springs from experience. For it may well be that our experiential knowledge is compounded from that which we receive through impressions, and that which our own faculty of knowledge (merely excited through sense-impressions) gives from itself, which addition we do not distinguish from that basal matter until long practice has made us attentive to it, and qualified us to sever it."¹ Here Kant apparently makes the impressions of sense (the "matter" of knowledge) to be experience or the elements of experience. By sense we are to understand him to mean both the "external" and the "internal" sense. But Kant is not uniform in his definition of experience. Reid remarks of it: "Experience informs us only of what *is* or *has been*, not of what *must be*."² Sir W. Hamilton affirms of experience the same, and something more: "Experience, in the philosophy of Matter, is accomplished through External Perception or Sense; in the philosophy of Mind, through Self-consciousness or Internal Perception. By this method we take cognizance simply of phaenomena. . . . By experience we learn the *fact that* (*ὅτι*), not the *reason why* (*διότι*):

(1) *Kritik d. r. V.*, p. 33.

(2) *Works*, p. 455.

for as what we thus know is known merely as existing, contingently it may be, but not as necessarily existing; so experience informs us only of what *is*, not of what *must be*. . . . Custom and Association are founded on Experience; and as far as Custom and Association go, Experience avails." ¹ He frequently represents experience as conversant only about "the contingent and individual." Dr. Mansel says: "If, therefore, *Experience* be taken in a wide sense, as coëxtensive with the whole of consciousness, to include all of which the mind is conscious as agent or patient, all that it does from within, as well as all that it suffers from without,—in this sense, the laws of thought as well as the phenomena of matter, in fact all knowledge whatever, may be said to be derived from *experience*. But further, experience in its narrower and more common meaning, as limited to the results of sensation and perception only, is, though not the *source*, the indispensable *condition* of discovering the laws of mind as well as of matter. . . . The object matter of thought, whatever it may be, must in the first instance be supplied through the medium of the senses." ²

Much confusion in the discussion of experience has arisen from the use of the term *sense*. This ambiguous word is often employed without qualifiers in the definition and description of experience, and the inevitable consequence is confusion regarding the nature of experience. Some writers by *sense* mean only the "external" senses, touch, sight, etc.; some, both the "external" senses, and the "internal" sense.

(1) Edition of *Kcid's Works*, pp. 971, 972.

(2) *Prolegomena Log.*, pp. 87, 88.

the consciousness of emotion, volition, etc. Writers are often not uniform in the use of the word, and it is difficult to determine with certainty the extension they give to it at important places. This equivocal and abused term I have therefore used sparingly, and only in places where I suppose there can be no doubt as to the meaning it is designed to bear. But the most obscure question regarding experience, especially in the treatment of experience by writers of the *a priori* school, is as to its junction or association with *a priori* principles and cognitions. They hold that in our knowledges, which are units or wholes in consciousness, there is the combination of experiential and *a priori* cognition. But what portion of these compound knowledges is contributed by experience itself, or what experience is in itself, in its own strict character considered apart from *a priori* cognition, is generally not made clear and intelligible. Some authors who in the most emphatic language declare the difference between experience and *a priori* cognition to be fundamental, at the same time represent experience as so thoroughly dependent upon, and pervaded by or implicated with *a priori* elements, that it is reduced almost to nothing. After attending to the nature of the *a priori* part of knowledge as set forth in the most positive, comprehensive, and unqualified terms, we are at a loss to discover what is left to constitute experience into anything of any definiteness and considerable value as a portion or source of knowledge.

In the further discussion of this subject we shall proceed in the following order: *First*, we shall endeavor to determine in brief what experiential knowledge is; *Secondly*, we shall consider its condi-

tions and presuppositions; *Thirdly*, we shall examine some of the chief experiential cognitions.

The primary elements *in toto* of experiential knowledge are the sensations, emotions, and volitions. These elements are in general the same as are commonly called the materials of the "external" and "internal" sense or perception. But as they are all, in their simple and full character, equally internal, equally pure modes of mind or of consciousness, it is an error to distribute them, when considered in themselves, to external and internal senses or sources. What these elements are in their simple and pure character as experiential materials, we shall examine to some degree further on. The primary materials of experience are, however, reduced by many to a much narrower compass than what is here given them. The sensations, the affections of the "external" senses, are alone reckoned as these materials. The reduction is carried yet farther by analyzing the sensations into "matter" and "form," and taking only the "matter." Against experience, as thus emptied of a large and important portion of its materials, we must suppose many of the current depreciatory utterances regarding the rank and sufficiency of the "senses," "sense-knowledge," "experience," are directed. But such limitation of experience is arbitrary. The sensations, emotions, and volitions are alike in being primary modes of mind, in being purely subjective, and also, in general, in their sources and projection into consciousness; and are, therefore, to be counted in the same manner as the materials of experience, and that, too, in all cases in the full character or integrity of their individual modes. They are the elements of experiential knowledge; they are

all to be taken, and, in their true and full character, constitute all.

But a statement of them is not a sufficient statement of the extent and character of this knowledge. Experiential knowledge properly includes whatever is immediately given in or with these elementary materials. Again, it includes all the compositions, abstractions and generalizations that are made from them. Further, it includes all inferences made upon them regarding the mind and the external world. Such in general is the character, as to elements and comprehension, of experiential knowledge.

Let us now proceed to consider its conditions and presuppositions. The most important condition of experience is certainly the preëxistence of the mind, with its faculties and their latent principles of action. The sensations, emotions, and volitions are modes of the mind; and the compositions and inferences made of and from them are operations of the mind. The mind with its equipment precedes in existence the rise of these modes and the light of consciousness, and these operations. Whatever there may be, in Leibnitz' *Nil est in intellectu quod non fuerit prius in sensu nisi intellectus ipse*, of the assumption that Locke did not believe in and assume the existence of real mind and its faculties as conditions of the existence of sensation and reflection and the whole of experience, and that the pure experientialist can not rightly presume the preëxistence of real mind, is mistake and absurdity. No school of philosophy has any privileges as to the assumption that the mind exists and has something in it before experience. Let the character of experience be what it may, pure from all *a priori* constituents, or thoroughly mixed

with or framed into such constituents, we must have mind with some internal equipment before experience arises and as the agent of it. Pure experientialism needs real mind and may as logically presume it, as pure or mixed transcendentalism.

Then preceding, and as the condition of experience, the mind exists as an entity possessing faculties, power, and unity both spatial and temporal. Sensations, emotions, and volitions are the productions of these preëxisting faculties. These affections are not innate, lying in the dark treasures of the mind, like the leaves in the cave of the Sibyl, and successively illuminated by consciousness; but can be properly described only as the contingent and temporary diverse productions of the mental faculties. These faculties, stirred to action by external stimulation, originate them from themselves, without any material contributed from the external; but by a process which is one of the profoundest mysteries. For example, upon the occasion of impressions upon the sense organs, the mind produces of itself, wholly from within itself, sensations. These phenomena are the subsequent modes of the preëxistent mind.

All the experiential productions of the mental faculties are strictly internal. They may be occasional or "adventitious," but they are not "external" and "foreign." By many, the mind is represented as "in itself a source of cognitions," with the implication that there is a source of cognitions or the materials of cognitions outside of the mind. The fact is, as we remarked before, all knowledge and all the elements of knowledge, including the experiential, are internal, are produced by the mind and are purely mental. The strong opposing terms "external" and "inter-

nal," "native" and "foreign," applied to different elements of knowledge, have no correspondingly strong difference in knowledge. This employment of these and like terms is an extravagant and corrupt use of language. All elements of the cognitive acts or states, down to "raw" sensations, have their source in the mind and are wholly mental.

Again, we must presuppose some inherent laws or principles of action as controlling the mental faculties in their experiential productivity. This is manifest from the fact that like stimulations excite like affections; from the regularity in the associations of mental phenomena; and the constant succession of intellection, emotion, and volition. These mental laws or principles may be properly denominated *innate* and *a priori*. For, being constitutional properties of the mind, they are native, inborn; and, as they precede and are the causes of the experiential cognitions, they are strictly *a priori* according to the prevailing usage of this term; though they are discovered only in the experiences which they produce.¹ The terms *native*, *a priori*, and the like, are, however, exclusively applied by many writers, as is well known, to another and

(1) In the *Intuitions of the Mind*, Dr. McCosh remarks: "There is something in man's soul at the time it is born" (p. 20). "Surely the mind has something more than a mere receptivity. It is not a mere surface, on which matter may reflect itself as on a mirror" (p. 21.) "The very acquisition of experience implies native laws or principles. So far from experience being able to account for innate principles, innate principles are required to account for the treasures of experience" (p. 23.) "Even in regard to knowledge acquired by experience, I maintain that, prior to its acquisition, the mind has the power of acquiring it" (p. 308). It must, I think, be admitted that the pure experientialist can maintain, with perfect consistency, the principle set forth in these statements.

higher class of mental principles; which are supposed to furnish to the cognitive and intellectual states, and to the sum of knowledge, materials or elements of the greatest significance, sometimes called forms, beliefs, that can not at all be found in, and do not belong to, the sensations, emotions and volitions in their pure character, or to any composition of them.¹ But this school of philosophy never show clearly what is the relation that this higher order of mental laws holds to the ordinary faculties, or to the other class of native and permanent mental laws just considered which govern the production and successions of the pure experiential cognitions or elements. The confusion in which they involve this most important question, and in which they leave it rest, deserves reprobation.

We shall now enter upon the consideration of some of the chief experiential cognitions. It is clearly a matter of great importance to ascertain some cognitions which are strictly and truly experiential, so that we may know what this degree or species of knowledge is in itself, or what it contributes to concrete cognitions. This examination will also afford us illustrations of the elements, conditions and laws of experience that have been above engaging our attention. But it is not the purpose to seek to

(1) The regulative faculty "is the power the mind has of being the native source of certain necessary or *a priori* cognitions; which cognitions, as they are the conditions, the forms, under which our knowledge in general is possible, constitute so many fundamental laws of intellectual nature." (Sir W. Hamilton, *Metaphysics*, p. 512.) "The native contributions by the mind itself to our concrete cognitions have, prior to their elicitation into consciousness through experience, only a *potential*, and in actual experience only an *applied, engaged, or implicate* existence." (Ed. of *Reid*, p. 770.)

determine here the utmost capabilities of experience as to the particular cognitions which we shall treat of, or as to any of its cognitions. These capabilities will be considered in the following chapters in the direct discussion of the extremes of knowledge.

(a) Of Mental Substance.

Experiential knowledge may be divided into immediate and mediate, on the ground of the relation the act or state of knowledge holds to the objects known. All acts of knowledge are in themselves purely subjective. They are immediately known; the acts and the consciousness of them are identical. What is immediately given or implicated in the acts of knowledge, is also immediately known; but objects that are external to consciousness, and not immediately given in the acts of knowledge, but only represented or symbolized by them, can only be said to be mediately known. The terms *immediate* and *mediate* have reference, not to any difference in our cognition of the acts of knowledge themselves, but only of the objects revealed in and through them.

Mental substance is an object of immediate experiential knowledge; at least this far, that it is known as a unit, as a cause, as the one permanent owner and agent of all cognitions and phenomena. The knowledge of real mind is immediately experiential for the same reason that that of the sensations, emotions, volitions, and their compounds, is. These experiences are modes of mind. They are not separate from the mind. Where they are, the mind is, entering with them into consciousness. The mind differs in this regard from every other existing object. No other object has the same near relation to the experiential states and consciousness. The mind is imme-

diately within the very light or flame of consciousness; or the flame of consciousness is seated within it. The same can not be said of any other object. Our knowledge of real mind is therefore peculiar; but it need not, and must not, be taken out of the realm of experiential knowledge. If our knowledge of sensations is experiential, so is our knowledge of real mind; for sensations are modes of mind. Though the mind precedes its experiential affections and consciousness, and may exist without them, or with them only in potentiality; and is in this manner distinguished from them; yet, when they rise into actuality, they are only modes of the mind. They and the mind come into knowledge inseparably. The modes and the mind are together in being and in knowledge. Our knowledge of the mind, then, is identical with that of the sensations, emotions, and volitions, in being purely *experiential*. It differs from that of all other entites known experientially, in being *immediate*.

But we have the strange spectacle in philosophy of writers who believe in the existence and immediate knowledge of mental substance, and who yet hold that, while our knowledge of sensation and other primary modes of mind is experiential, our knowledge of mental substance, of which they are but the modes, is an "original intuition," a knowledge essentially different from pure experience. This is a most arbitrary partition of knowledge. The knowledge of real mind must be the same as the knowledge of its own modes. Sensation is but a mode of the mind. If our knowledge of that mode is experiential, the knowledge of the mind of which it is a mode must be experiential, and can not be anything else. To make the knowledge of the former experience, and

the knowledge of the latter "original intuition," is to make a distinction and severance, where there is no corresponding existential or real difference. Both mode and substance are known together, because they are existentially together; and in the same way. Our knowledge is and can only be pure immediate experience, leaving no necessity and no room for "original intuition" or "*a priori* cognition." A mode of cognizing mental substance distinct from, or additional to, pure experience, could have place or plausibility only if the sensations, etc., were phenomena standing near, but yet standing apart from, the mental noumenon, holding some such relation to it as the encircling atmosphere does to the earth; or, if there were no vital connection between the being and the knowing of the mind.

(b) Of Extension and Space.

Whatever may be said of the cognition of the greatest extensions and of illimitable space, the cognition of limited or small extensions and space is to be ranked as purely experiential. This fact seems to be granted by some transcendentalists. While holding, especially of space, that our whole knowledge of it, or our knowledge in its wholeness, can not be experiential, they appear to allow that we may have of limited space a "contingent," "adventitious," "*a posteriori*" knowledge.

That in at least some of the sensations there is implied the immediate knowledge of extension, we have already maintained. This knowledge is purely experiential. It is so, because extension is an original, inseparable, constitutive property of these sensations. Pure sensations are universally or very generally allowed to be pure experiential materials or

cognitions. The same can not be denied of the limited extensions known in them; for the reason that these extensions are constituent properties of the sensations. They are known with them, and in the same manner. Sensation and extension form the same indivisible cognition. Only if it were a fact that extension was not a property of simple and pure sensation, would there be place and requirement for the theory that extension is a form with which perception or sensation is invested, or in which it is set, coming from a different source in the mind than pure sensation, and belonging to a different and higher order of mental law than does the rise of sensation.

Extension is revealed especially in touches and colors. There has been, between transcendentalists and associationalists, a considerable amount of debate as to the relation of extension and the special quality of color, whiteness, redness. The former regard the special quality and extension as parts of the same phenomenon, inseparable in consciousness, but yet coming from different sources,—the special quality from “experience” or the “external,” and extension from an “internal,” “native,” “*a priori*” source. The latter regard the apparent inseparability of the special quality and extension as simply an instance of the close union produced by invariable association between facts that have no original connection with one another. Neither of these theories has any real ground. We have no reason whatever for supposing the close association between the special quality of color and extension is not an original connection, and that the frequent concurrence of the two has anything to do in welding them and keeping them together. Extension is an essential or constituent

property of color. The special quality and extension were never apart, and were never put together. When the special quality begins to have existence, it is extended. It does not have existence before it is extended. Extended color is a primary unit of experience.

But though extended color is an original unit of knowledge, we may yet properly distinguish, in a certain manner, the special quality and the extension. The special quality is the product of the exertion or action of the mind. The extension is an expression of the being, or of a constituent, fixed, passive mode, of the mind. But the extension of a sensation is to be distinguished from the extension of the mind. The former is the expression of the latter, and is contingent and temporary. The latter is permanent; it precedes and is independent of all sensation and experience. Both the special quality and the extension of the sensation are contingent and temporary. The extension of the mind, and the faculty which produces the sensation, are both constituent properties of the mind, preceding and conditioning experience, existing before the temporary experiences arise, and continuing after they disappear. The faculty is in itself extended; and into the production of the sensation enter both the action of the faculty and this its constitutive passive mode. The extension of a sensation, we may accordingly say, holds a relation to the being of the mind different from that of the special quality, and peculiar. The extension of the sensation is a literal expression of the passive constitutional extension of the mind. The special quality is an original, temporary product of action; and is different, as to permanency, from the active, constitu-

tional faculty that produces it. But at the same time, the special quality and the extension rise into existence and consciousness together by the extended faculty,—are an original and indissoluble unit.

Extension is thus perceived in sensation, and is a pure immediate experiential cognition. If the special quality of sensation is experientially cognized, then is the extension; because the special quality is in itself extended. Extension is an essential, original, constitutive quality of it; and the cognition of the whole sensation is one act of one kind. But of course, antecedent to and independent of sensations and knowledge are the faculties which produce them. These are independent of all experiential knowledge. They are the innate, *a priori*, permanent causes of it. In such manner are the being, or constitutional properties, of the mind, and the temporary thinking of the mind, related.

The knowledge of external extensions and limited void space is also experiential. These, however, being distinct from and external to the mind or its modifications, can be known only mediately. The process we have already considered in its details. This knowledge is an inference from the internal experiential modes, especially from the sensations and volitions.

(c) Of Duration.

Duration is not a something, a property, or a mode originally distinct from the experiential modifications of the mind, the sensations, emotions and volitions, and by the internal necessary laws of mind added to or impressed upon them. It is an original property of these modifications. The sensations themselves have duration. There is, therefore, no

need and no justification for separating duration from the special quality of the experiential modes of mind and assigning it to a different cognitive origin. The duration of a sensation is a quality of the sensation and is cognized in the sensation. The whole cognition is an original unit of knowledge, and purely experiential. The duration of the temporary modes of mind comes from the duration of the permanent mind, because of the close relation of the mind to its modes; and, because of the close original relation of the special quality of the modes of mind to their duration, both special quality and duration are known in the same pure experiential cognition. The Kantian mode of severing the affections of sense from the sense-form time, and both affection and sense-form from the being of the mind, has its ground in fancifulness. All three are most intimately related, and give themselves to us in pure, original, unitary experiential cognitions.

The knowledge of the durations, at least the limited durations, of external objects or events, is also purely experiential. It is mediately experiential, made by inference from the durations of the mental modifications occasioned by them. But, strictly speaking, our knowledge of past mental events, or of past stages of continuing mental events, is also mediate; for only that which is present in time is immediately known. Yet while our knowledges of past mental events and external objects are both mediate, there is, as I have observed before, a decided specific difference between them. The knowledge of the former is much closer than that of the latter.

In the knowledge of extension and duration there is implied the knowledge of a twofold unity.

(d) Of Active Power or Causation.

The knowledge of the fact of causation, or the knowledge that the mind sometimes, at least, causes by its exertion modes of itself, must be classed with the immediate pure experiential cognitions. Cause and effect may endure, or be present, simultaneously. The knowledge of external causation, from the basis of subjective causation and through causation partially subjective and partially objective, has been already treated with perhaps sufficient detail. Volition is a primary mode of mind, like sensation, and a primary experiential element. The sense of power in producing a mental change by volition, is of the essence of the volition; and there is no ground at all for supposing that the sense of power is not an original quality of the simple, pure, experiential volition. We can no more separate the sense of power from what is experiential in volition and assign it to a peculiar and higher source in the mind, than we can so separate and assign the extension or duration of pure retinal sensations. In our experience of subjective power there is involved the knowledge of the causational unity of the mind.

(e) Of Matter.

Our knowledge of matter is a complex notion and inference, and is wholly experiential. The main properties of matter, resistance, extension, and duration, are known mediately through subjective power, extension, and duration; and our cognitions of them are by consequence experiential cognitions based on experiential cognitions.

These are some of the main pure experiential cognitions. We have not aimed to complete the list of them, nor to determine the farthest reach of expe-

rience in respect to any of them. The question of the nature and number of experiential cognitions is fundamentally a question of the integral character of the pure elementary experiences, sensations, emotions, and volitions, and of the relation they hold to real mind. Much error in running the line between experiential and *a priori* knowledge is the result of an arbitrary analysis of the primary experiential states. These states, especially sensations and volitions, some psychologists so analyze, as was noticed above, as to exclude, and to refer to another origin, the most important part of pure experiential knowledge, and to reduce this knowledge to a very limited and very uncertain quantity. Taking these elementary states in their simple, original, pure character, and in their true relation to real mind, we can ascertain with clearness and precision the character and extent, as to essentials, of experiential knowledge.

In the present chapter and in preceding parts of the work, the near range and lower degrees of knowledge have been pretty fully considered. Attention has been given to the processes concerned in them, and to the definite character of experience. It now remains to discuss the farthest reach and highest degrees of knowledge; to determine their character; to ascertain as far as we can the main mental principles that control them; to examine the relation of these extreme portions of knowledge to the near and to experience, and the relation of the principles concerned with them to those concerned with the latter.

CHAPTER III.

THE NOTION OF INFINITY.

Infinity is not in itself an entity or a distinct being; but is a quality of beings and a quality of qualities. It is a quality of space, time, power, number. This fact that it is a quality, and not an independent thing, and the distinct objects and qualities to which it belongs, must not be unregarded in treating of it. The discussion of infinity has generally had reference to space, time, and God.

The infinite or an infinite is especially that (*c. g.* space) to which we can think no limits. It may in itself actually have no limits. Owing to the narrow capacity of the human mind, its representation and knowledge comprehends only the finite. Whether we can not think of limits to some things of which we clearly cognize portions, and whether these things really have no limits, are two distinct questions. The former question is easily answered. The latter never can be, with absolute certainty, by our cognitive faculties. The more appropriate application of the term *infinite* is to those things of which we are incapable of conceiving or thinking limits, leaving undecided the question whether they are existentially without limits.

The rise of the idea of infinity has probably never been explained better than by Locke. He supposes it to be produced by the gradual recession of the bounds of known things, or by additions which are seen or are thought to be made to them, and made by uniform amounts or according to a uniform prin-

ciple of increase. He says: "I think it is evident that the addition of finite things together (as are all lengths whereof we have the positive ideas) can never otherwise produce the idea of infinite, than as number does; which consisting of additions of finite units one to another, suggests the idea of infinite, only by a power we find we have of still increasing the sum, and adding more of the same kind, without coming one jot nearer the end of such progression."¹ He remarks specifically of our notions of infinite space and time: "Every one that has any idea of any stated lengths of space, as of a foot, finds that he can repeat that idea; and joining it to the former, make the idea of two feet; and by the addition of a third, three feet; and so on, without ever coming to an end of his addition, whether of the same idea of a foot, or, if he pleases, of doubling it, or any other idea he has of any length, as a mile, or diameter of the earth, or of the orbis magnus; for whichsoever of these he takes, and how often soever he doubles, or any other wise multiplies it, he finds that after he has continued his doubling in his thoughts, and enlarged his idea as much as he pleases, he has no more reason to stop, nor is one jot nearer the end of such addition, than he was at first setting out. The power of enlarging his idea of space by further additions remaining still the same, he hence takes the idea of infinite space."² "By being able to repeat ideas of any length of time, as of a minute, a year, or an age, as often as we will in our own thoughts, and adding them one to another, without ever coming to the end of such addition any nearer than we can to the end of num-

(1) *Essay*, II., xvii. 13.

(2) *Ib.*, II., xvii. 3.

ber, to which we can always add; we come by the idea of eternity as the future eternal duration of our souls, as well as the eternity of that infinite Being, which must necessarily have always existed.”¹

In this manner we arrive, Locke teaches, at the ideas of infinite time, space, number, power. It is of importance to observe that our notions of infinity are chiefly of those things which are conceived to be homogeneous throughout their whole extent; as, especially, time, space, and number. This homogeneity admits the idea and possibility of illimitable addition to any bounded or fixed quantity. It enables the mind to run outward, to add easily quantity to equal quantity. The mind has nothing new to learn in any advanced step of addition, but has only to add like to like. The very easiness of the process of addition makes the idea of the infinite almost seem entirely positive. Locke well remarks in answer to the question “why other ideas are not capable of Infinity” than those especially of space and duration: “It may be demanded, ‘why we do not attribute infinite to other ideas, as well as those of space and duration’; since they may be as easily and as often repeated in our minds as the other; and yet nobody ever thinks of infinite sweetness or infinite whiteness, though he can repeat the idea of sweet or white, as frequently as those of a yard or a day? To which I answer, all the ideas that are considered as having parts, and are capable of increase by the addition of any equal or less parts, afford us by their repetition the idea of infinity; because with this endless repetition there is continued an enlargement, of

(1) *Essay*, II., xiv. 31.

which there can be no end. But in other ideas it is not so; for to the largest idea of extension and duration that I at present have, the addition of any the least part makes an increase; but to the perfectest idea I have of the whitest whiteness, if I add another of a less or equal whiteness, (and of a whiter than I have, I can not add the idea,) it makes no increase, and enlarges not my idea at all; and therefore the different ideas of whiteness, etc., are called degrees."¹

It is a fundamental truth, and it is assumed by Locke in the above extracts, that our idea or assumption of the infinity of anything, is founded on or proceeds from the knowledge of finite portions of the same thing. This is true of space. The knowledge of finite portions of space precedes, and necessarily precedes, our notion of infinite space. It is by the multiplication of known limited spaces in regular quantity, or by a clear and well-known principle of increase, that we come to whatever notion of infinite space we ever attain. Thought is led outwards from the immediately surrounding or near space by the perception of objects of greater and greater distance; just as the first mariners were attracted and induced to venture from the main land by visible islands and promontories. From distant terrestrial bodies, thought proceeds to the celestial bodies. And it does not stop in its outward course when cognizable objects cease to attract. It goes beyond the remotest star revealed by the telescope. After the perceptive and representative powers have reached their farthest and are utterly exhausted, thought may yet go beyond them, by the aid of the characters

(1) *Essay*, II., xvii. 6.

and law of arithmetical notation. This progression of thought beyond the limited seems to be dependent on the fact that at the remotest point in space which the mind may at any time reach, it posits, so to speak, a bounding line or surface to the cognized volume of space. Now this very surface itself calls for space beyond, just as really as an outlying visible body. We perceive that the remotest distance we have reached is no stopping place. These outer bounds, in their own nature, demand a farther, inclosing space. This same demand we plainly see will rise at the remotest points of space thought can reach by all the aid arithmetical notation can give it. This distinct demand, this plain conception, is the most important fact of our notion of infinite space. Our notion of the greatest space is not then simply indefinite; because at the outermost bounds of space thought ever reaches, there is a definite, positive demand made by these bounds themselves, by the very fact of their facing outwards, for outlying, inclosing space. Thus thought is positively led outwards. It never reaches a point where it may stop as if at the end or is relieved of the necessity of going on. It never really or knowingly compasses the whole extent of space.

Our notion of infinite space, as of everything considered to be infinite, is both positive and negative. The notion of infinite space is positive because we truly cognize limited portions of space, and because the very great extent of space of which we may think expressly requires farther space to surround it. But the notion is also negative; for it does not comprehend the whole extent of space, or space that can be supposed incapable of receiving addition. Our per-

ception, imagination, and thought of space are all of the finite. This finite indeed definitely requires extension beyond itself, but the extension is never comprehended. The infinite space of which we think is the non-finite. It is a very great finite space to which the mind is unable to think absolute limits. What has been said of space is for the most part applicable to Time.

Our notion of the infinity of the Creator,—of his power, intelligence, immensity,—is dependent upon our notion of the infinity of the universe and of time. From our knowledge of the creation we infer the attributes of the Creator. We must think that his immensity is coëxtensive with space, and that his power is equal to the creation of space and all its contents. We could assume limits to his immensity, power, and duration, only if we could think of absolute limits to space and time. Further, any contrasting of the whole extension of the universe and the immensity of God is impossible to human thought.

Let us now consider the fundamental question, whether our notion of the infinite, as of infinite space or time, requires the action of any faculty of mind distinct from or above the ordinary experiential faculties; whether the notions of finite portions of space or time must be referred to one faculty and the notion of infinite space or time to another. A large class of philosophers, as was observed above, stoutly argue for the affirmative of this question. They hold that by an *a priori* mental principle, tendency, or belief, distinct from the powers and the laws by which we cognize the finite or finite measures, we attain to the notion of the infinite; that the *a priori* principle compels us to regard things of which we can perceive and

think only finite portions, as infinite. This doctrine appears to be scientifically untenable. It introduces an unwarranted break into knowledge. It divides into two parts what is a continuous, unbroken line of knowledge, assigning to two different orders of faculties what is the progressive work of one order alone.

Our knowledge of space is based on the immediate cognition of extension given in sensation. From this ground of immediate knowledge, the mind, first by means of the locomotive organs and the muscular sense, acquires the knowledge of near space. Then by means of the visual sense, our knowledge is greatly widened so that it takes in a very large sphere of space. To the point where the muscular and visual senses carry our knowledge of space, the knowledge may be called perception. Of course this perception is only mediate, since our immediate perception extends no farther than the cognition of extension in sensation; though upon the latter the whole fabric of perceptive knowledge rests. Where perception ends, the imagination may begin and carry the knowledge farther out by multiplying the portions traversed by perception; and when imagination fails, thought may still go on by the aid of arithmetical symbols and language. But in the cognition of very large space, there is often a mingling of perception and imagination or symbolic thought. For example, we may be properly said to perceive the sun, and yet we can not be said to perceive the vast distance of the sun, nor even to imagine it. We can, however, think it by means of the complex, but clearly understood, symbol 92,000,000.

In this manner we cognize, by the ordinary or experiential faculties, a very large sphere of space.

But thought does not stop with such a sphere of space. It is led, or disposed to go on, to the notion of infinite space. It comes to the conviction that the largest sphere of space by any means thinkable, can not be considered as absolutely limited, but must be considered as bounded by ulterior space. Now, should the notion of infinite space be regarded as the effect of a faculty or principle of thought distinct from and above the ordinary? Without such a faculty or principle would the thought and conviction of space stop with the farthest thinkable bounds? We must answer in the negative. This notion is not the result of an *a priori* subjective necessity to think of the finite and infinite, or the relative and absolute, in contrast; for finite things and portions may be thought of in contrast with one another, and are so thought of by children and uncultivated minds before and without any conception of or concern about infinity. Nor is it the result of a like necessity simply to believe that certain things of which we cognize limited portions are illimitable. It is fully accounted for by the nature of thinkable objective space. At every stage in its outer cognitive progress into space, the mind sets bounds, or, so to speak, a convex surface. To think of a finite sphere of space implies the thought of a bounding curved surface. And when thought has gone its farthest, the surface still presents itself. Now it is the convex surface which produces the conviction that there is space beyond the farthest that we can think. This convex surface, experientially known, manifestly implies or requires in itself yet ulterior concave space. It requires us to believe that space exists beyond our ability to think. It of itself urges thought beyond the power of thought to go.

To assume any innate, *a priori*, original distinct law or tendency of mind, any special principle beyond what is concerned in pure experiential knowledge, to account for our notion or conviction of infinite space, appears, therefore, gratuitous and unwarranted. Our conviction is entirely accounted for, without need of any such subjective principle, by a quality of objective space, or by the character of our pure experiential notion of space. It is the nature just noted of cognizable, objective, finite spatial spheres, of the narrowest and widest, or of the outer bounds or lines, so to speak, of our pure experiential perceptions and images of space, which does not suffer thought and conviction to stop with, but forces them beyond, the thinkable finite. Our knowledge of finite space and our notion of infinite space are therefore but successive parts or steps of the action of the same cognitive faculties. The knowledge of finite space or spaces does not awaken or start a distinct *a priori* principle in the mind to announce the infinity of space; but finite space, or what comes to the same thing, the periphery of the experiential representation or thought of finite space, directly raises of itself the conviction of the infinity of space. The bounding line itself of our actual extreme cognition or thought of space, and not an *a priori* subjective tendency or law, demands space beyond. We may observe, finally, that the progress of thought to the opposite extreme, to the infinitesimal, is explicable by like principles.

CHAPTER IV.

NOTIONS OF PERFECTION.

The mind's power of forming notions and ideals more perfect than any knowledge we gain by sense-perception and our actual experiences, is admitted by most philosophers, however diverse may be the modes of explaining it. Mr. J. S. Mill remarks that it is one of man's "most familiar and most precious attributes, that of idealizing as it is called -- of constructing from the materials of experience a conception more perfect than experience itself affords."¹

The mind has this power in different spheres of thought, as the mathematical, the aesthetic, the moral. In geometry, for instance, we employ perfect surfaces, surfaces absolutely plane and of two dimensions, length and breadth without thickness, and perfectly straight lines; although we never perceive such surfaces and lines. Here the mind goes beyond actual experience, and forms and uses notions more refined and perfect than it really forms in perception, and than can be formed out of the elements of experience as they really occur. In art and ethics also we form and employ ideals and standards more perfect than our actual perceptions. What is the power and process of advancing thus beyond our actual cognitions? In attaining to these perfect figures and standards does the mind exert an extraordinary

(1) *Three Essays on Religion*, p. 162.

native faculty? is it originaive or productive in a degree and manner beyond what it is in real or common experience?

Let us consider first the perfect geometric elements, especially the line and surface. All geometric notions and operations imply the preceding knowledge of the three dimensions and the homogeneity of space. Of a geometric line, *i. e.*, of a line which has length without breadth and thickness, we have no perception. The finest lines we ever actually perceive are very elongated solids. But though this be the fact, we yet do not come to employ the pure line or length independently of perceived lines. We come to it by means of the perceived line, through abstraction. Perception gives us all there is in the pure line, but more; that is, with length it gives breadth and depth. But the mind is able, by the power of abstraction, to attend to one dimension of a perceived line, its length, and disregard the other two, and to employ it with much facility in geometrical operations. There is, however, no real abstraction, to the extent of actually imagining the length of a line apart from its breadth; for we can not image mere length, or a line much finer than the finest we perceive, as, for instance, the finest fiber of the cobweb; but we can attend to or take account of the length alone of a line and neglect the breadth; we can in thought negative the breadth, though we can not picture a line which has no breadth. There is, therefore, in the employment of the geometric line no production beyond the perception of a line. We do not come to it by an operation of mind independent of sense-perception, but only by a species of ideal analysis of the dimensions of the perceived line.

But, deeper than the question of the mind's ability to employ the geometric line, is the question, what leads or impels the mind to the thought and employment of it? what excites the mind to the use of a line finer than it ever perceives or images? what moves and directs it to go beyond its real experience? The chief cause is doubtless the frequent and clear experience of the gradation in the thickness of lines, from the heaviest cable to the finest gossamer, and the manifest and frequent convenience of having a line or lines as fine as possible — lines whose intersections and angles are not solids, curves that do not have an interior concave and an exterior convex edge. In coming to the use of the geometric line, the mind ideally completes, or follows to the limit, a gradation plainly manifested, and almost completed, by perceived lines,— a diminution of thickness with the retention of length, until the former almost disappears. In the thought of the geometric line, one step farther is taken in the course of this previously perceived and well-known gradation — thickness is dropped altogether out of account.

So much for the line in general. The straight line deserves some special consideration. A straight line is defined as the shortest distance between two points. This definition Kant regards as, not an analytic, but a synthetic proposition, on the ground that "shortest" is not involved in "straight." Doubtless the shortest distance between two points is always a straight line; but straightness does not from the first so self-evidently include "shortest distance," that it would not be better if our definition of a straight line were made without distinct regard to the latter notion. It is a very common action with mechanics,

and indeed with all people, when they wish to know precisely how straight a line, or an edge, as of a board, is, to hold it lengthwise to the eye, so that the two ends shall impress the same point or part of the retina. The degree of straightness is accurately perceived by the distance the line or edge bends or departs upward or downward, to the right or the left, from the single point impressed by its two extremes. If the edge departs very little from the point, it is called very straight. In this manner, by sense, we can perceive almost absolute straightness. A straight line may therefore be defined as one which, when held lengthwise to the eye, is not distinguishable from its end, or, rather, is hidden by its end. The smaller the end, the finer will be the line. If we go beyond perception and imagination and make the end a geometric point, we make the line pure length without breadth and depth.

We may reach the notion of straightness by the gradual negation of curvature. If we have no actual perception of perfectly straight lines, we have of crooked ones. We have acute perception of the gradation of these latter, from very great to very little crookedness. We easily rank lines in a series, as to their crookedness. With the pen we may draw a series of lines of diminishing curvature; and have often occasion to draw and form lines as straight as possible. Having this power, in perception, of seeing degrees and following actual successive diminutions of curvature in lines up to great straightness, we pass then in geometry a little, but not very far, beyond perception, to the employment of perfect straightness. In this, thought only completes a process which we have already experienced, in its nature and direction.

and nearly in its completion, in perceptions. By the momentum the mind gets in successive approximations, in perceptions, it passes on beyond perception, but in the line of perception, to the limit. The removal of the quality of crookedness, which is nearly completed or seen in perception, is entirely completed by negation in the use of the geometric straight line. Because of the ease and rapidity with which the mind can carry through the above processes of abstraction, approximation, and negation, we can handle and argue from concrete straight lines in the eye just as if they were perfectly pure and straight.

If the above remarks be true, it is clear that there is no need to assume the action of an extraordinary mental faculty to account for the thought or employment of a geometric straight line. Thought does indeed make a remarkable advance here; but all that is needed to account for this advance is our perception and imagination of lines, and the impulse and direction given to thought by the gradation and approximation of these simple experiences of perception and imagination.

It was observed above that, though a straight line is the shortest distance between two points, the notion of straightness does not necessarily include and suggest the notion of "shortest distance," and may be considered apart from it. But we are not long in learning that a straight line is the shortest distance between two points. Ordinary sense-perception carries us to a very high degree of certainty in regard to this. We know, for example, by the eye, that the diameter of a circle is shorter than the semi-circumference. Superposition of one line upon another enables us to perceive in an instant, with

absolute certainty, which is the longer; but in many instances, without superposition, as in the comparison of the diameter and semi-circumference of a circle, we can see with certainty that the curved line is longer than the straight. Experience distinctly shows us in very many cases that lines and objects varying in curvature from the semi-circumference to nearly the straight line, are decreasingly longer than the straight line joining their ends,—that, if straightened out, their ends would extend beyond the ends of this line, but less and less; and thus by the direction of experience we arrive at the conclusion that every cord is shorter than its arc, that one side of a triangle is shorter than the sum of the other two.

What has been said of the notion of a line may be repeated in essentials of a surface. We handle in geometry pure surface, that is, length and breadth without depth, and absolutely plane surface. Such surface, however, we never perceive; but by abstraction, approximation and negation, we are able to employ it in geometric operations. Of surface, as commonly perceived, we withdraw or disregard the depth. The employment of the geometric surface is not independent of perception; but depends upon abstraction from and gradual diminution and negation of what is given in perceived surfaces,—by which means we can attend exclusively to two dimensions, neglecting the third.

An absolutely plane surface is one in which, any two points being taken, the straight line that joins them lies wholly in the surface. We have the perceptions of uneven surfaces ranging up to the almost perfectly plane. We readily perceive differences in evenness. We perceive these differences most

sharply, and get our perception nearest to perfect evenness, by holding surfaces edgewise to the eye, and bringing the near and remote edges to impress the same line, as far as may be, of the retina. A surface that curves or departs very little from the line is known to be very even. Gradation of evenness is clearly observed, and we perceive in instances extremely even surfaces; so that it is no great leap of thought to continue the gradation cognized by perception to the geometric plane, the limit. We come to the use of this plane by completing a gradation which has been followed, as in the case of the straight line, nearly to the limit by perception.

We may conclude in general, as to the employment of the important geometric quantities just considered, and of others, that it depends upon the common faculties of experience, and requires no extraordinary originating power of the mind. The basis of all are the spatial quantities which we perceive by our senses. Yet no doubt the employment of the geometric quantities implies a most important advance beyond our actual perceptions, and beyond even the reach of the imagination. This advance, however, is not properly extra-experiential, not *a priori*. It is a movement of thought impelled by a tendency acquired wholly in experience of graded sense-perceptions and images, and by conveniences discovered in experience; and directed by the courses or lines of variation clearly cognized by sense. Thought would never advance to the geometric limits or abstracts, if it were not impelled and clearly directed towards them, and nearly carried to them, by sense-experience. It is because thought is so impelled and guided that the employment of geometric quantities still must be

regarded as coming within the sphere of experiential thought proper.

From the idealized magnitudes of mathematics let us pass briefly to consider moral ideals. In the sphere of moral thought we form notions of rectitude and character, higher, more perfect, than any rectitude and character we ever actually perceive. There is thus in ethics as in mathematics something beyond perception, a power that carries us beyond the point reached by perception. The question to consider is, whether this power is really more productive than perception, whether it acts at any time without dependence upon perception, whether it gives anything not already really or virtually given in actual experiential cognition.

Idealization in regard to moral character and the moral standard or good or virtue, or our thinking of a moral nature more perfect than our own, and than any we perceive, is not an originating process, but consists in abstraction, combination and augmentation with respect to what we know by perception or experience. Our moral idealization is the gradual idealization of the virtues and the standard which we know in experience.

Our idea of the perfection of the divine character is formed by the purification, augmentation and combination of our moral perceptions. Des Cartes supposed that our ideal of God, because of its purity and loftiness, must be produced in the mind by God himself; that only a perfect being can give rise to the idea of himself. But the mind certainly has in moral conception similar capability to that which it has in mathematical; and it can construct from its conceptions, without really originating anything beyond them, an

idea of a perfect moral being, such as we think God to be. The ideal of God does not lack truthfulness, or real correspondence to an objective, as was shown before, because of the fact that it is the result of the elevation and combination of elements. Its truthfulness is warranted in the real objectivity of the things represented by these elements, and in what leads to and requires their elevation and combination.

Aesthetic ideals, or the productions of the art-imagination, are governed by the same principles as all other idealization. Perceptions and the simple modes of consciousness must furnish all the materials. Out of these, by refinement, enlargement, composition, the mind constructs the poem, romance, picture, model. There is no real creation in the most perfect of these works. The imagination of the supreme artist has remarkable power in handling and combining materials; but it puts nothing of its own real creation into its works. Imagination owes all to the elements and complex modes supplied to it. But, as was remarked in the chapter on Imagination, it is necessary to observe closely what the imagination really derives from the preceding elementary experiences. Generally it is supposed to derive from them only its original materials. But its indebtedness is much more than this. It derives both *materials* and *tendency* or *direction*. The possession of abundant materials and easy power over them will not alone account for the art-work of the mind, especially for its originality and perfection. The imagination is apparently beckoned, led on, in its construction, by a model hovering before it. This fact of direction is plainly a fact of primary significance to the imagination, which it owes, as was just said, to

perception and other preceding experiences. It is the differences, the gradations in beauty, in rank of form, in all diverse qualities, of the objects of nature, as we perceive them, which, beside individual subjective peculiarity, set imagination forward towards goals as if they were foreseen. Tendencies and gradations in nature, manifested through perception, the mind feels and follows; and having been thus started in certain lines by experience, may, because of the imparted tendency, follow these lines beyond what experience reveals. The works of the imagination, in their perfection, are in all cases the completion of gradations and progressions of our actual experiences.

In conclusion, I quote the following passages, bearing on this subject, from Mr. Ruskin: "We have hitherto been exclusively occupied with those sources of pleasure which exist in the external creation, and which in any faithful copy of it must to a certain extent exist also. These sources of beauty, however, are not presented by any very great work of art in a form of pure transcript. They invariably receive the reflection of the mind under whose shadow they have passed, and are modified or colored by its image. This modification is the Work of Imagination. . . . We are told that judgment or taste 'directs the combination' [of the imagination]. In order that anything may be directed, an end must be previously determined: What is the faculty that determines this end? and of what frame and make, how boned and fleshed, how conceived or seen, is the end itself? Bare judgment, or taste, can not approve of what has no existence; and yet by Dugald Stewart's definition we are left to their catering among a host of conceptions, to produce a combination which,

as they work for, they must see and approve before it exists. This power of prophecy is the very essence of the whole matter, and it is just that inexplicable part which the metaphysician misses." ¹ The work of the imagination can not indeed be formed on models or selections which assume its work as already done. The faculty is not led in its constructive acts by perfect ideals hovering before it, but rather is moved by an impulse working from behind, awakened by previous observation of nature, and impelling in directions revealed through this previous observation. Imagination has a subtile power of prophecy; but its prophecies are yet subject to tendencies and directions already apprehended by the mind in its previous sense and other experience.

(1) *Modern Painters*, II., p. 139.

CHAPTER V.

THE NECESSITY AND UNIVERSALITY OF KNOWLEDGE.

The necessity which characterizes some of our knowledge or notions is a marked and notable quality; and from the time of Leibnitz, but especially from that of Kant, has been regarded by the Intuitionist school of philosophy as giving, in itself, or in combination with the closely related quality of universality, decisive proof of *a priori* principles of knowledge, or of an innate source of knowledge distinct from and above experience proper.

In considering the necessity and universality of knowledge, and the mental principles concerned with them, it is important to discriminate the different species of necessity and universality, and clearly define those which are of chief importance in our present discussion.

There are two modes of necessity. An example of the one is the necessity of thinking that space is boundless, or that two straight lines can not inclose a space. An example of the other is the compulsion under which men formerly held, in resistance to the Copernican astronomy, the view that the heavenly bodies revolve around the earth and that the earth does not turn on its axis. Between these two modes of necessity there is a great difference. The former may be called the necessity of pure thought. It consists primarily in the compulsion to image, or picture, something in a certain form, or in the impossibility of

picturing the contrary of something. The latter may be called the necessity of belief and feeling. It does not as the former refer to the power of imagining; for it was never impossible for men to picture in thought the earth as a sphere revolving on its axis, and the heavens as at rest; but refers to the powerful constraint of belief and emotion, or the inability to believe and give in to something, which, though imaginable, yet stands in direct opposition to a notion to which the mind has already, from whatever cause, given full consent.

There are likewise two modes of Universality. A principle is said to be universal when it is believed by all men; as, for example, the uniformity of nature. Again, a principle is universal when it has no exceptions; as, for example, No two straight lines can inclose a space; The angles of every triangle are equal to two right angles. Necessity and universality, and their different modes, are doubtless very closely associated in our knowledge. In the present discussion we have chiefly to do with the first mode of necessity, the necessity to image a thing in a certain manner or the inability to image its contrary, and with the second mode of universality.

We shall consider necessity and universality with reference to the following grand principles and objects:

1. The most general laws of thought, the Principles of Identity and Contradiction.
2. Space and Mathematical Axioms.
3. Time and the Principle of Causation.

1. The Law of Identity is simply this: Whatever is, is; or, A thing is equal to itself. The Law of Con-

(18)

tradiction is commonly stated thus: A thing can not be and not be at the same time; Contradictory propositions can not both be true; What is contradictory is unthinkable.

The necessity of these principles, or our inability to think the contradictory of them, is clear and unimpeachable. Everything, every thought of everything, I am compelled to regard as equal to itself. I am compelled to exclude its contradictory. If I truly say that a sensation is, it is impossible for me truly to say that it is not, or that it both is and is not. When I have the perception of a square object, I must think it is what it is. I find it impossible to attribute to the object the quality of roundness, and think of it as both square and round.

Now what is the foundation of these cases of unquestionable necessity in our thinking? Commonly it is supposed that they are the effect of a native active law of the mind, distinct from those laws which control the rise and composition of the pure experiential modes; that this very necessity carries in itself the evidence that it can not be experiential, and is *a priori*. This important assumption is made without sufficient proof. There is no real requirement for it. Rather, the necessity is purely experiential. When I have a particular perception, or image, I must think it is what it is, I can not think it as both existing and not existing, or as possessing contradictory attributes, because of the definite character and inner vitality of the pure experiential mode. These necessities inhere in the notion itself. They belong to its essential character as experiential. Every present notion has in itself, as an element of its being, as its own internal energy, self-asserting

and expulsive power. This power, this constitutional energy, irresistibly denies the non-presence of the notion, it is equal to and effects the exclusion of a contradictory attribute. The perception of a square object absolutely excludes the contradictory quality of roundness, because of its proper constitutional vitality and force as a present pure experiential state of mind. To deny to any notion the power of asserting itself invincibly against its contradictory, is to deny to it full character as a pure experiential affection. The persistence of any experiential mode is wholly itself or of itself. It may be held, therefore, that to attribute these instances of necessity to any *a priori* law, or to anything outside of the sphere of pure experience, has no real warrant or requirement in facts.

These general laws of thought have not only the quality of necessity, but also of universality. There are no exceptions to them. They pertain to everything the human mind ever perceives, or thinks of, or can think of. *Everything* is equal to itself. *Nothing* can be thought as both existing and not existing. Is this universality a fact of experiential or *a priori* cognition? It is said that experience has to do only with the finite and particular, that it never comprehends all the cases or possibilities of anything or principle, and that, therefore, the quality of universality can not be attained to or be properly assumed by experience, but must be in all cases a contribution to knowledge from a power above experience. This reasoning is not conclusive in regard to the principles of Identity and Contradiction. The universality of these principles is implied in their simplicity, as their simplicity is cognized by experience. They regard only

the simplest and most general of all facts — the fact of mere existence, and the supreme opposition of existence and non-existence. Now all states of consciousness, all thoughts, all things, however much they may differ, yet agree in possessing the attribute of existence,—an attribute which as far as it is known at all, to its greatest universality, is, because at least of its very simplicity, known by experience; and there is no need whatever to call in an *a priori* law, superior to experience, as the source of our knowledge of its universality, and the universality of the contradiction of existence and non-existence. As to the quality of mere existence, to know some thing or many things is, in fact, to know all things that can be thought or spoken of.

2. Let us next consider the qualities of necessity and universality in regard to space and mathematical axioms. These are the cases in which these qualities are believed to show themselves most distinctly and positively, and which have been most conspicuous in the controversy regarding the nature and ground of necessary and universal thought.

First of space itself with its three dimensions. It can not be denied that thought is under absolute compulsion as to certain characteristics of space. For example, we can not think of space as non-existing or think it away. Again, we can not think of it as having bounds. "We are altogether unable," says Sir W. Hamilton, "to conceive space as bounded,—as finite; that is, as a whole beyond which there is no further space. Every one is conscious that this is impossible. It contradicts also the supposition of space as a necessary notion; for if we could imagine space as a terminated sphere, and that sphere not

itself inclosed in a surrounding space, we should not be obliged to think everything in space; and, on the contrary, if we did imagine this terminated sphere as itself in space, in that case we should not have actually conceived all space as a bounded whole."¹ It is equally impossible to think away any portion of space, or to imagine vacancies or voids within it. These are unquestionable instances of the necessity which our thought is under in regard to space.

What now is the true doctrine as to the ground of this necessity? Shall we hold that the necessity is absolutely in the subject or mind, or in the object? Shall we place it in a peculiar, *a priori*, subjective law, which makes our thought of space necessary, but not our thought of the material things contained in it; or shall we place it in the simple perception or experiential thought of space? There is no sufficient warrant, as I have already briefly argued, for calling in here any *a priori* law, principle, or tendency. The necessity is in the object, space; or, what comes to the same thing, in our pure experiential cognition of space. In our perception or thought of any portion of space, from the least to the greatest,—from that which the body fills to that which extends to the horizon, or the clouds, or the moon, or sun, or a star,—by the very fact of thinking it a portion of space, or by the fact that our thought of space is of finite only, we in a manner posit a circumference or bounds. But we do not in any instance think that these bounds are the absolute limit of space; and we can not so think. We are compelled to think of space yet beyond them. But this necessity has its whole ground in the circum-

(1) *Metaphysics*, p. 527.

ference or in the convex bounds themselves that limit every finite and perceptible or thinkable portion of space. These bounds looking outwards imperatively require, of themselves, outlying, surrounding space. They demand such space as a counterpart. The very limit of our perception or thought of space demands, of itself, space beyond the perceptible and thinkable. It irresistibly calls up of itself the thought of exterior, inclosing space. The same objective cause and subjective limit which enable or lead us, as was seen in a previous chapter, to think of space as infinite or non-finite, *compel* us so to think. Experience itself compels us to go beyond itself.

The impossibility of thinking away any portion of space, or thinking of vacancies in space, or of empty emptiness, is fully accounted for by the same means that account for the inability to think of a limit to the outward extension of space. A void or hole in space would of course be bounded, so to speak, by surrounding space. But because of these bounds, it is impossible to think of such a hole. These bounds irresistibly demand space in the hypothetical void. Finally, the impossibility of thinking space, as a whole, away has its primary ground, apparently, in the extension of thought or perception itself. In order to think all space or extension away, we would have to think thought itself away in the very act of thinking, which the law of contradiction forbids.

It being possible to explain our necessary thought regarding space by space itself, or by our ordinary thought that is representative of space, we must deem it gratuitous and illogical to call in the aid of any of those active or productive and controlling subjective principles which constitute the higher portion of the

a priori philosophy, and to divide our knowledge of space to different orders of faculties. The mind being conscious of its own limits, and being perceptive of the sphere of outer space widening and widening, has, when it becomes awake to anything like full and bright cognition of these phenomena, in them irresistible compulsion to think of space as it does; and no other source of necessity can be proved to exist. The supposition that necessity can not be a quality of pure experiential knowledge, and must be the product of a higher source; that its very presence is of itself decisive proof of such a source; is not the only instance in philosophy of an unwarrantable assumption being elevated to the rank of a primary, self-evident principle.

The doctrine has been earnestly and vigorously advanced, especially against the Transcendentalists, that the necessity of our thought of space is the effect of the frequent and invariable association of ideas; and that it is not unchangeable, but is the "consequent of our limited experience." Says Mr. J. S. Mill: "That we are unable to conceive an end to space I fully acknowledge. To account for this there needs no inherent incapacity. We are disabled from forming this conception by known psychological laws. We have never perceived any object, or any portion of space, which had not other space beyond it. And we have been perceiving objects and portions of space from the moment of birth. How, then, could the idea of an object, or of a portion of space, escape becoming inseparably associated with the idea of additional space beyond? Every instant of our lives helps to rivet this association, and we never have had a single experience tending to disjoin it. The association,

under the present constitution of our existence, is indissoluble. But we have no ground for believing that it is so from the original structure of our minds. We can suppose that in some other state of existence we might be transported to the end of space, when, being apprised of what had happened by some impression of a kind utterly unknown to us now, we should at the same instant become capable of conceiving the fact, and learn that it was true. After some experience of the new impression, the fact of an end to space would seem as natural to us as the revelations of sight to a person born blind, after he has been long enough couched to have become familiar with them. But as this can not happen in our present state of existence, the experience which would render the association dissoluble is never obtained; and an end to space remains inconceivable.”¹

The importance of very frequent and unvaried association in knowledge, but especially in the production of our convictions or beliefs, can not be disregarded. Ideas that have often appeared together and never appeared apart become most tenaciously associated with one another. To frequency of conjunction must be attributed in great part the extremely powerful convictions regarding the existence of surrounding material things and the uniformity of nature. But the laws of association have their definite limits. Though they are potent in producing conviction, they contribute nothing to the elements or materials of any cognition, of any perception or image. They bind elements existing independently

(1) *Exam. Hamilton*, I., p. 102. See *Logic*, 8th Amer. Ed., pp. 178, 179.

of them, and beget the strongest conviction of their union; but to suppose that they furnish any original matter to perception or images, or bring out of their elements in association what was not in them before association, seems to be a delusion.

Our inability to think bounds to space pertains to the matter of knowledge, and does not pertain to belief. It is inability to image, it is not simply inability to believe; and the law of inseparable association has not a great deal to do with it. There is no reason to suppose that it is changeable by any extension of our experience. At the same time it must be admitted that we never perceive a portion of space that has not other space beyond it. This experience is continual and unvaried. There is, however, no ground for the assumption that the frequency and invariability of our experience produce the inability to image space without ulterior space. These facts of experience in no degree oppose, but are entirely consistent with, the view that the inability is wholly caused by the very limits themselves of every perceivable or imaginable portion of space; that the attempt to image space as having a termination, or bounding surface, so to speak, is an attempt to imagine something which, in its very nature as a limited space, must irresistibly raise the thought of surrounding space as its counterpart. Finite space, which is truly represented by our subjective notions, demands the existence of space surrounding its bounds; for these bounds, in themselves, facing outwards in every direction, imply surrounding space and impel our thought. In the very effort to image real bounds to space, thought is driven, not without, but yet in essential independence of, the invariability of expe-

rience, by the nature of the single effort itself, to exterior space.

But, as was just granted, our inability to think an end to space is not independent in all respects of some repetition of experience. We are not conscious of this inability, in our first cognitions of extension and space. We are not distinctly conscious of the limits of our first cognitions. Attention is not fixed on them. Clear thought of limits, and of the absence of limits, comes only after some experience. No doubt the clear consciousness of our inability to think limits to space is dependent upon our successive perceptions of the dimensions of surrounding space, or of the recession of the bounds of cognizable space. This experience makes clear the thought of difference of volume. It brings attention to bear fixedly on the limits of cognizable portions of space, and the expansions of these limits; and when the thought of varying and receding bounds has become clear, the inability to think of a real end to space is clear; not, however, only because of the invariable association of every perceived portion of space with exterior space, but primarily because of the very limits themselves of perceived space, or of our perception of space, which perception is true to the objective reality.

And we can not rightly suppose that the inconceivability of real bounds or an end to space is not permanent, or is changeable by any expansion of experience. Mr. Mill, however, as is seen in the passages just quoted, contends for the contrary, that terminated space might become a conceivability; and supports the assumption by reference to supposed cases of inconceivables having become conceivables; as the fact of antipodes. He says again: "As that

phenomenon [inconceivability] only exists because our powers of conception are determined by our limited experience. Inconceivables are incessantly becoming Conceivables as our experience becomes enlarged. There is no need to go farther for an example than the case of Antipodes. This physical fact was, to the early speculators, inconceivable; not, of course, the fact of persons in that position; this the mind could easily represent to itself; but the possibility that being in that position, and not being nailed on, nor having any glutinous substance attached to their feet, they could help falling off. Here was an inseparable, though, as it proved to be, not an indissoluble association, which, while it continued, made a real fact what is called inconceivable; and because inconceivable, it was unhesitatingly believed to be impossible. Inconceivabilities of similar character have, at many periods, obstructed the reception of new scientific truths: the Newtonian system had to contend against several of them; and we are not warranted in assigning a different origin and character to those which still subsist, because the experience that would be capable of removing them has not occurred." ¹ But there is no cogency in the argument from the case of antipodes to the case of space; for there is an essential difference between the realities concerned. The inconceivability of an end to space is altogether different from the past inconceivability of antipodes. An end to space is inconceivable in the sense that it can not be represented or imaged. Antipodes were inconceivable, not in the sense that they could not be imaged, but in the sense that they

(1) *Exam. Hamilton*, I., p. 84.

were unbelievable. Antipodes could always be represented, but they could not be believed. This important difference between the two cases Mr. Mill himself distinctly recognizes at another place,¹ and it should have been allowed its full worth in this argument. Because a thing which, though imaginable, was incredible, becomes credible, affords no ground for concluding that a thing which is unimaginable might become imaginable. The cases are entirely unlike. There is much more between them than a difference of intensity of association of ideas. The difference is one of kind, and there is no logical course from one to the other. If there were any instances of changes similar to what the change from the inconceivability to the conceivability of an end to space would be, then there would be a real basis for reasoning; but such instances can not be pointed out. In the entire absence of them, Mr. Mill's view remains a groundless supposition. It is on a par with those suppositions, often made by the transcendentalists, of modifications of our knowledge that might be, if the internal constitution or fundamental laws of the mind were different from what they are. Conjecture regarding what our cognition, or ability of conception, might be, either in case the constitution of the external creation were different from what it is, or in case the constitution or operation of the mind were what it is not, is idle speculation. It is but perplexing the science of knowledge with extravagances.

So much regarding space. Let us now go on to consider the necessity and universality of mathematical axioms, which presuppose the thought of space.

(1) *Exam. Hamilton*, I., p. 91.

We need not consider all these axioms. The most conspicuous one in the controversy regarding the qualities of necessity and universality has been the geometrical proposition, Two straight lines can not inclose a space. Probably all the parties to the controversy would be willing to risk the decision as to all the mathematical axioms upon what can be proved or determined regarding this one. We shall therefore give most attention to it.

What is the Intuitional theory of the necessity and universality of the axiom, that two straight lines can not inclose a space? Among the most able advocates of this theory is Dr. Mansel, and he may be taken as a representative. He holds in general that these qualities are grounded in space as a subjective condition of perception and imagination; certainly not in the experiential cognition of straight lines. We must think that two straight lines can not inclose a space, because of this subjective, constitutional condition of the possibility of thinking two straight lines. I quote the following emphatic illustrative declarations made against the experiential doctrine, especially against the associational: "Experience has uniformly presented to me a horse's body in conjunction with a horse's head, and a man's head with a man's body; just as experience has uniformly presented to me space inclosed within a pair of curved lines, and not within a pair of straight ones. Why do I, in the former case, consider the results of my experience as contingent only and transgressible, confined to the actual phenomena of a limited field, and possessing no value beyond it; while, in the latter, I am compelled to regard them as necessary and universal? Why can I give in imagination to a quadruped body

what experience assures me is possessed by bipeds only? And why can I not, in like manner, invest straight lines with an attribute which experience has uniformly presented in curves? Can it be said that the ideas in the latter case are contradictory, and that their union is therefore forbidden by the laws of formal thinking? By no means. *Straight* and *curved*, viewed merely as objects of sense, are opposed only as *black* and *white*, or as *biped* and *quadruped*; they can not, that is, be thought as existing at the same time in the same subject: but that property which experience testifies to have universally accompanied curved lines is not, merely by virtue of that experience, more incompatible with straight ones than the head which has uniformly accompanied a biped body is incompatible with a quadruped one; or than the form which experience has uniformly connected with a white surface is incompatible with a black one.”¹ “I may imagine the sun rising and setting as now for a hundred years, and afterwards remaining continually fixed in the meridian. Yet my experience of the alternations of day and night has been at least as invariable as of the geometrical properties of bodies. I can imagine the same stone sinking ninety-nine times in the water, and floating the one hundredth; but my experience invariably repeats the former phenomenon only. Whereas, in the case of two straight lines, which, so far as they are objects of experience, stand only on a level with the above and similar instances, the mind finds itself compelled to assert as necessary one attribute, not contained in the concept, and to reject its contradictory as impossible.”²

(1) *Prolegomena Log.*, pp. 99, 100. (2) *Ib.*, p. 97.

The associationalist explanation of the necessity of the axiom that two straight lines can not inclose a space, viz.: that it is owing to the frequency and invariability of the association between inclosed space and a curved line or lines, or more straight lines than two,¹ is inadequate to the phenomenon; or, to say the least, is uncalled for; but not just on the grounds affirmed by Dr. Mansel. His argument against the associationalists is not conclusive. Experience of the alternations of day and night, or of the sinking of a stone, may be as *invariable* as that of the geometrical properties of things, but it is not nearly as *frequent*. That two straight lines do not inclose a space, is one of the most frequent perceptions of life; it is a thousand times more frequent than the perception of the succession of day and night. It is suggested by, or implied in the knowledge of, almost every object on which the eye may rest. It is manifest, for example, within the narrow sphere of one's room, in the angles and edges of the furniture, of the door frames, of the window frames and sash, of the books, in every corner, in every instance of diverging edges; (and in the perception of these concrete lines, the mind by abstraction, approximation, and negation readily deduces the truth of geometric lines;) so that the assumption that the two cases stand on a level, as to frequency of experience, is an evident and serious mistake of fact.

(1) "That we are unable to believe or imagine it in our present circumstances, needs no other explanation than the laws of association afford: for the case unites all the elements of the closest, intensest, and most inseparable association, with the greatest freedom from conflicting counter-associations which can be found within the conditions of human life." (Mill's *Exam. Hamilton*, I., p. 329.)

But though the cognition that two straight lines do not inclose a space, is undoubtedly one of our most frequent experiences, very many times more frequent than that of the rising and setting of the sun, there is no sufficient ground for putting the necessity of the axiom in frequency of experience. Some repetition of experience no doubt is required; but only so much is required as will make the difference between straight and curved lines clear, and the employment of them in thought easy. To attribute anything more important to repetition is gratuitous.

The real ground of the necessity of this geometric axiom, and of the difference in this regard between it and the cases brought into comparison with it, is not in frequency and invariability of experience, or in any peculiar subjective principle, but is wholly in the objects concerned, and especially in their property of simplicity. A straight line is as simple an object as we ever imagine or employ in thought. The geometric straight line is identical, we may say, with one of the three dimensions of space, and nothing can be more simple. On the other hand, the sun, a stone and its motion, a horse's head, a man's body, a biped, a quadruped, are very complex objects. Now it is in this great difference in the character of the objects in the different propositions and cases specified by Dr. Mansel, and not in difference of universality of experience, or in an *a priori* law, that we have the ground of the difference as to necessity and conceivability, and the solution of Dr. Mansel's queries. Geometric straight lines are the simplest things. They have but one dimension. This one dimension is in fact all there is of them. They can not be analyzed further than to be cut into pieces. Because of their perfect sim-

plicity, the mind comprehends them easily in their full character, and in a moment exhausts the possibilities of any two as to the inclosure of space. The simple and perfectly cognizable nature of two straight lines itself necessitates thought and makes the inclosure of space inconceivable. We distinctly see at once what must be true of them. Heads and bodies, etc., are on the contrary very complex objects. They have three dimensions. They can be easily severed and dissected, and the parts variously arranged by imagination at will. This complex nature renders numerous possible adaptations or conjunctions easily conceivable, and negatives necessity as to any particular conjunction. So with bodies and particular motions. Not to mark fully this fundamental and perfectly plain difference in nature between geometric objects and the concrete objects here brought into comparison with them, is a great oversight, and misses the only true explanation of their difference as to necessity and conceivability.

That two straight lines, parallel or secant, can not inclose a space, is not, as is often affirmed, a synthetic, but an analytic judgment. The impossibility of inclosing a space is implied in the nature of two straight lines. The predicate of the axiom repeats or explicates what is contained in the subject, and adds nothing new whatever. In the simple character of two straight lines I plainly and immediately see the impossibility of their inclosing space; and, accordingly, the explanation, in essentials, of the necessity of the axiom is involved in the explanation of the process by which, from the perception of the concrete line, we attain to the geometric line. Suppose that two diverging straight lines start from a point in the

eye and proceed outward infinitely. I can not of course follow the lines by imagination into infinity; but I can easily picture two qualities which the lines will possess at every foot of their prolongation to infinity,—the two qualities with which the lines start, and which constitute their peculiar character and relation,—viz.: *straightness* and *divergence*. Though I can not imagine the whole length of the lines, just as I can not imagine the whole of space, yet, as was just said, I can clearly imagine these two properties, straightness and divergence, which the lines will by their very nature have at every place in their course,—which are indeed all that there is of the lines in their individuality and relation. I also see that if the lines should inclose a space, they would require at some place curvature and convergence, which I can clearly imagine. But curvature and convergence are most plainly contradictory to straightness and divergence. The two sets of qualities can not be thought as belonging to the same pair of lines at any place in their course, because the two sets of qualities are so plainly contradictory. The latter qualities require an entire and perfectly imaginable change in the nature and relation of the lines possessing the former. I can not think of the two straight, diverging lines, perfectly simple, whose essence is in their straightness, as inclosing a space, because two properties which the lines must, by their very nature, possess at every part, can not coëxist with contradictory properties. We start with two straight lines, and we can not but end with them. To say that two divergent straight lines can never inclose a space, is to say that they are two divergent straight lines; or, that they always maintain their simple, and easily and perfectly cognizable,

qualities of straightness and divergence, that these two qualities never become, nor coëxist with, the opposite simple united qualities of crookedness and convergence. Thus the inability of thinking of two secant straight lines as inclosing a space is at bottom in the fundamental law of thought, the principle of Contradiction, the impossibility of thinking contradictory attributes as coëxisting, in a case, too, where the attributes posited are the simplest of being, and in themselves constitute the whole subject.

The universality of mathematical axioms is as real and remarkable a property as their necessity; and is also supposed to prove decisively the operation of an *a priori* principle in the mind superior to the pure experiential principles. "Human experience," it is argued in general, "is never complete, never exhausts the possible variety of cases; its judgments are never universally certain, but are valid only so far as our observation has extended." It is said especially of mathematical axioms, and of the axiom that two straight lines never inclose a space: "A single enunciation of an axiom, or a single demonstration of a theorem in mathematics, is as valid as a thousand; and the conviction once gained is gained with an absolute certainty, which no subsequent evidence can increase."¹ "It is not by trying two straight rods, ten, twenty, or a thousand times, that we arrive at the general proposition that two straight lines can not inclose a space, and thence conclude as to two given lines presented to us that it is impossible they should inclose a space. . . . Place before us two new substances, and we can not tell beforehand whether they

(1) Mansel's *Metaphysics*, p. 223.

will or will not chemically combine; but on the bare contemplation of two straight lines, we declare they can not contain a space; and of two parallel lines, that they can never meet."¹

The main facts are here no doubt correctly stated; but they do not support the implied conclusion of a higher or a deeper principle of thought than the experiential. Our observation, it is true, never comprehends all possible cases of any principle; but yet it is not true that we can not affirm universality, as to some judgments, through our pure experiential powers. The propositions of geometry and the propositions of natural science, as those concerning chemical combination, gravitation, etc., differ, in the marked and unquestionable manner declared in these extracts, as to the quality of universality; but this difference does not prove a difference in the sources or principles of knowledge; it depends entirely on a difference in the nature of the realities considered in the two classes of propositions. The universality of the axiom that two straight lines can not inclose a space, depends on the same fact on which its necessity depends, viz.: the absolute simplicity of the two objects comprehended in its subject. Because of this fact, we are able to affirm, without the help of any *a priori* law of thought, that what is true of two straight lines at one time is true always, or that what is true of any two is true of every two. And the universality of thought which the simplicity of these geometric realities makes possible, the complexity of almost all other realities makes impossible.

Owing to the great simplicity of geometric

(1) McCosh's *Intuitions of the Mind*, p. 362.

straight lines, the singular notion contains nearly the same that is in the general notion, and the general notion contains nearly the same that is in the singular. Straight lines thus form a class *sui generis*,—a class in which all the individuals are alike, (or can differ only as to the extent of their one attribute, their one dimension,) and nearly all that is in every individual enters into the concept. Consequently to know one is to know all, or the class; and what is seen to be true of any two, is in reality seen to be true of all twos.

The great difference between the class straight-line and any class of composite objects, as that of horse, is manifest to every one. The latter class consists of many complex individuals, no one of which is known perfectly, and no two of which are known to be entirely alike. They differ in size, color, power, habit, etc. The general notion includes only certain common qualities, and excludes many singular qualities. Because of the very complex nature and the dissimilarity of horses, and the great difference between the content or comprehension of the general notion and of the singular, the impossibility of making universal judgments regarding horses, *e. g.*, regarding their structure, action, is quite apparent.

In this plain difference between straight lines and horses, or any class of composite objects, regarding the individuals and the concepts, lies the ground of all the differences of our judgments as to universality. Geometric straight lines are simple and alike, each possessing and consisting of the one property, or dimension, straightness. The class notion contains nearly all that is in every of the singular notions. In knowing the individual we about know the class.

Therefore in the ability to cognize what is true of one or two in one instance, is implied the ability to cognize what is true of every one or two always; and the reason for our ability to make universal judgments regarding straight lines, contains also the reason for our inability to make them regarding any class of objects that have three dimensions and a complex internal nature.

We notice, further, the argumentation against the experiential doctrine of the universality of the axiom we have been considering, as it is exemplified in the following declarations: "Twenty times have we tried, and found that two straight lines do not inclose a space: this does not authorize us to affirm that they never can inclose a space, otherwise we might argue that, because we had seen a judge and his wig twenty times together, they must therefore be together through all eternity."¹ "We can not, from the bare contemplation of hydrogen and oxygen, say that they must unite in any particular proportion, or that they shall unite at all. The law is reached by the pure observation of particular cases, and these, however many, are still limited in number; for all the cases of the mutual action of hydrogen and oxygen in the universe, never can fall under our notice. The law may, after all, be a mere modification of a higher and wider law; there may be exceptions to it in other worlds; it is in no sense absolutely or universally certain. But on the bare contemplation of two given straight lines, I perceive, without any succession of trials, that they can not inclose a space. I perceive that this would be true of any other two straight lines

(1) McCosh's *Intuitions of the Mind*, pp. 23, 24.

that could fall under my notice, and thus I reach the general maxim that no two straight lines can inclose a space, a maxim admitting of exceptions at no time and at no place." ¹

The facts are here in general rightly stated, but the inferences are remarkably illogical. They are not cogent even against the associationalist doctrine. These statements prove nothing, because they wholly ignore the great difference between the nature of straight lines and the nature of the other objects, a judge and his wig, hydrogen and oxygen, which are compared with them. Straight lines are the simplest of things and are perfectly known. These other objects are not simple; and we can not be certain that we do or ever shall know them perfectly. In any particular case of parallel or secant straight lines, because of the perfect simplicity and my perfect knowledge of the case, I in effect know all possible cases. An association or relation between two straight lines has therefore plainly a cognizable universality which a relation between a judge and a wig can never have. By the experiential contemplation of oxygen and hydrogen, it could not be said whether they would unite, or in what proportion they would unite, because the inner nature and laws of these elements were not known, and may never be fully known. But by the bare contemplation or thought of two straight lines, we see that they can never inclose a space, because we at once cognize perfectly the very simple fact of the two straight lines.

The same mode of reasoning will account for the fact that a single demonstration of a geometrical

(1) McCosh's *Intuitions of the Mind*, p. 43.

theorem is as valid as a thousand; that many repetitions add nothing to the certainty. Take the theorem, that the angles of every triangle are equal to two right angles. We see its universality in one single demonstration. This is possible because of the simplicity of the triangular figure and of its changes. The chief step in demonstrating that the angles of the triangle A, B, C are equal to two right angles

consists in showing that the exterior angle A, C, E, formed by producing the side B, C, is equal to the two interior and opposite angles. This is done by means of the line C, F, drawn parallel to the side B, A. Now one demonstration is as valid as a thousand, because, owing to the simplicity of the figure and its changes, the mind easily comprehends the limits of all possible cases. An exhaustive series of triangles as to form may be constructed on the side B, C, by the movement of the apex A in a circuit from C, E, on the right, to D, B, on the left. The mind comprehends in a moment, with clearness, that, let the direction and the length of the side B, A, be what they may, a line can be drawn from C parallel to it, and that what was demonstrated in one case can be demonstrated in every case, or was demonstrated for every case. The universality of geometric propositions, primary and secondary, is, therefore, in the peculiar nature, the simplicity, of the quantities or realities concerned; and no mental power is required

for the cognition or comprehension of it superior to the purely experiential.

It is also manifest that there is as little need of the so-called laws of inseparable association to explain this universality, as of any *a priori* principle. That our experience of two straight lines not inclosing a space is very frequent and invariable can not be denied; but there is no need of invoking frequency and invariability of experience to account for a cognition which the simplicity of the nature of a straight line or lines fully accounts for. And, further, for the same reason the speculation of the associationalists regarding the permanency of the necessity and universality of this and other geometric axioms appears wholly inconclusive. Mr. J. S. Mill says: "We can not conceive two and two as five, because an inseparable association compels us to conceive it as four; and it can not be conceived as both, because four and five, like round and square, are so related in our experience, that each is associated with the cessation, or removal, of the other. We can not conceive two straight lines as inclosing a space, because inclosing a space means approaching and meeting a second time; and the mental image of two straight lines which have once met is inseparably associated with the representation of them as diverging. . . . We should probably have no difficulty in putting together the two ideas supposed to be incompatible, if our experience had not first inseparably associated one of them with the contradictory of the other."¹ We can not grant that this argument has any validity. The necessity of the propositions that two straight

(1) *Exam. Hamilton*, I., pp. 89, 90.

lines can not inclose a space, and that two and two are four, or the inconceivability of their contradictories, is not the result of invariable association or its causes; and, therefore, nothing can be deduced from the principles of association as to their permanency. The necessity of these propositions is, we must admit, not without, or apart from, invariable experience; it would not be, if experience were not invariable; nevertheless it seems plain that it is not on account of the invariability of experience. The idea of *two secant straight lines* and the idea of *not inclosing a space* are inseparably associated because they are parts of the same simple simultaneous cognition. These parts were never apart, and were never put together. They are inseparable in their nature, and not made so, from separableness, by frequency and invariability of conjunction. We can not conceive two and two or four, as five, because with a short experience we most clearly cognize the difference between these two simple numbers. There is not the least evidence for supposing any known law of association, through any duration, could cause us to think of them as the same, or to think of them otherwise than we do now. The theorizing of the associationalists, as to the permanency of these and coördinate facts and relations, goes so far beyond experience, or is so lacking in encouragement from experience, that, when reduced to its naked form, it amounts only to this trivial assertion: if our experience or cognition were not what it is, it would be something else. Frequency or invariability of association is important in giving fixity to our convictions; but it is not very important in determining what the mind must represent, or can not represent, now or ever, as to geometric or indeed any other entities.

We might here proceed to consider other mathematical axioms beside that of two straight lines, to which we have almost entirely confined our attention; but it is unnecessary. None of them affords anything more favorable than it for the Intuitional theory of axioms, and anything more unfavorable or difficult for the Experiential theory. Omitting, then, further examination of them, I pass to consider, finally, the necessity and universality of the notions of Time and Causation.

3. Time or duration, as already remarked, is not an entity or independent thing, but only an attribute of entities, as of space and of its contents; and whatever necessity may belong to our notions of time, belongs to our notions of time in this character.

There is a peculiar necessity in our thought of time. We can not think time away. We can not think a limit to it, either a beginning or an end. But there is no real need of referring the necessity of our thought of time to an extraordinary or *a priori* power or source of knowledge. It has its ground, as far as the operations of the mind itself are concerned, in the fact that succession is a primary characteristic of our thinking, and experientially known to be so. Our whole life of thought is a succession of mental events known by means of the permanency of the mind. Through the succession of our thoughts we know also the succession which is as important a characteristic of the events of the whole external world as the succession of events is of the internal.

Now, we can not think succession and duration away for the reason that they are most distinctly and certainly cognized in all our thinking. They must be so cognized in the very attempt to think them

away. Their distinct and positive presence in every exertion of thought, forever makes the negation of them impossible to thought.

Inability to think an end or a beginning to time is involved, in part at least, in the necessity of our thought of space. External things have duration, but we can think away or annihilate them all in thought except space, which holds all things and whose time embraces the times of all things. This necessity of the thought of space includes that of the thought of time. In other words, we can not think a beginning or an end to time because we can not think away space. Thought is under coercion as to the existence of empty space; it is therefore under coercion as to its attribute duration or time. Moreover, in regard to time, as in regard to space, the very limits themselves of our knowledge or experience force thought beyond them.

The notion of succession is not the whole, but it is an essential part of, our notion of causation. Every cause and effect is an antecedent and consequent. In addition to the notion of succession, causation includes the notion of active power. Every cause is an antecedent possessing power to produce an effect.

The constitution of the notion of causation, and the process of cognizing the chief diverse cases of causation, we have already considered at length. We are here concerned only with the necessity and universality of the supposed principle of causation, that every event must have a cause or causes.

The Intuitionists have held that the necessity and universality of this principle are an *a priori* cognition, with an earnestness and confidence proportionate to the importance of the subject. It is common

with them to distinguish several points and stages in the cognition of causation: as, first, The particularity of the cause of an event; second, The uniformity of causation, or the principle that in the same circumstances the same causes will produce the same effects; third, The difference between the judgment that every event must have some cause, and that an event has this particular cause; fourth, The question of the infinite regressus of causes; fifth, That the Deity and the human will are not subject to causation as other realities are.

Now Intuitionists teach that the knowledge of the particular cause of this or that event, and of the uniformity of causation, is or may be experiential; but that the knowledge of the necessity and universality of causation is *a priori*. To the necessity and universality of the principle of causation, they, or some of them, make an exception of the human will and God, and deny the need of going to causes back of God. As to the knowledge of the character of particular causes, Sir W. Hamilton says: "The discovery of the connection of determinate causes and determinate effects is merely contingent and individual,—merely the datum of experience; but the principle that every event should have its causes, is necessary and universal, and is imposed on us as a condition of our human intelligence itself."¹

This partition of our knowledge of causation can not escape the charge of being artificial and arbitrary, and must always excite suspicion as to the truthfulness of the intuitionist doctrine. If such important parts of our knowledge of causation as the character

(1) *Metaphysics*, p. 534.

of particular causes and the fact of uniformity are experiential; and if the principle of causation is not absolutely necessary and universal, but knows a few exceptions; then it remains improbable that there is any other source of the knowledge of causation than the experiential, or that the general and indefinite principle, that every event must have *some* cause, is anything more than an acquired conviction.

The great strength and the universality of the tendency to look for, or think of, a cause for every event must be allowed; but our experiences of causes and effects, and of their uniformity, are sufficient to account for them. It is necessary, however, in order to attain a clear idea of the nature and growth of this tendency, to bear in mind that the notion of cause consists of the two notions of antecedent and active power; and to consider which of these constituent notions contributes most to the tendency. No doubt, the former contributes most. The tendency to think of a cause for every event, is both a tendency to think of an antecedent and of an antecedent having power; but it is more of a tendency to think of an antecedent. Our experience of succession has more to do with the tendency than our experience of power.

Because of the prominence and ceaselessness of our experience of succession, it is impossible that there should not exist a most potent tendency to think of an antecedent for every change. Every situation of surrounding or cognizable things we know as the successor of a preceding situation. We know events always as a flow or stream. We are constantly looking along this stream; and this ceaseless experience must so dispose our thought that, when we

perceive an event without having perceived its antecedent or antecedents, we shall think of antecedents.

But in the tendency to think of antecedents for every change, is implied the tendency to think of antecedents having power to produce the change. Our experience of power, though not as unqualified, and possessing the mind as fully, as that of succession, is yet very frequent. The notion of succession comes into all our experience or is always present; the notion of power does not come into all our experience, but certainly into very much of it, and enough to engender a tendency to look for a productive antecedent for every or almost every change. At a very early period of life we learn clearly to discern the peculiar character of the effects produced by the intelligent power of man, and to distinguish his agency from the motions of inanimate things. The difference between man with ability to produce changes in himself and in other things, and matter without ability to change of itself, becomes through experience a fact of clear perception and fixed conviction. It is the perception of the special marks of the effects produced by man, and of the difference between the ability of man and of mere matter, which is the basis of the demand made, even by the minds of children, for an intelligent power as the cause of every effect that is striking by possessing any mark or marks like those possessed by the effects of human agency.

We conclude, then, that there is nothing in the facts of our thought of causation which requires us to go to sources beyond the sphere of experience. The judgment that every event must have some cause, is

but the expression of a tendency of thought engendered by our prominent and ceaseless experience of succession and power. If it be true that all knowledge of particular or determinate causes, and of the uniformity of causation, is experiential, the thought that every event must have *some* cause can only be an indefinite or indeterminate conviction resulting from this experience. To refer it to a source superior to that of the definite cognition of determinate causes and the uniformity of causation, has no sufficient warrant. These definite experiences produce this conviction; and to distribute them and it to different sources of knowledge, is to make an arbitrary break in what is the same whole experiential cognition.

There has arisen in recent times a new theory of the origin of axioms and the necessities of thought, viz.: that of Heredity or Evolution. According to this, the necessities of thought are "*a priori* for the individual, but *a posteriori* for that entire series of individuals of which he forms the last term."¹ The theory is designed to mediate between the "Kantian hypothesis" and individual experientialism. It provides, in the view of its advocates, a length of experience and frequency of repetition of associations which the necessary and strongest associations of our knowledge require, and which individual life does not possess.

Much has always been, and much always must be, granted to heredity. We must presuppose for the individual a mind preëxistent to thought, possess-

(1) Spencer's *Psychology*, II., p. 195.

ing faculties of sensibility and consciousness. His thought is certainly determined by transmitted constitutional conditions. But this does not require us to presuppose any formed, or organized, innate or transmitted knowledge. The individual's knowledge, notwithstanding, may be all his own, in its rise, in its necessities, in its internal relations and external references. The relation between thought and the pre-existent faculties and the preëxistent nervous organism is surely very close; but it is not close enough to prove that the mental constitution and knowledge are absolutely identical, or to prove the identity of nervous matter and mind. Whatever may be true of the development of the nervous and whole physical organization and the development of mind, of their simultaneity, reciprocal influence, etc., it has not been established that material accumulation and structure are one with the accumulation and structure of knowledge.

The supposition, especially, that there is need to resort to ancestral experience for a sufficiency of repetition to account for our strongest associations of thought, is one that can not be substantiated. We must allow that some repetition of experience is needed for the rise of necessary notions and indissoluble associations; but, as we have already seen, the rise of these necessities does not require nearly all the duration of the individual's experience, and therefore certainly not the long addition of ancestral experience. This is true especially of the necessity ruling the imagination or the representative powers. It is true also, to some extent at least, of the force of beliefs.

I readily grant, however, that the duration of the individual's experience is not sufficient for the effectuation of one very important thing in controversy, viz.: the "consolidation" of a pure time-series into a space-series, or the derivation of the notion of space from the notion of time; but no duration of experience is sufficient for that impossible derivation.

CHAPTER VI.

THE CERTAINTY AND CRITERION OF KNOWLEDGE.

The finiteness and fallibility of the human mind have made the question of the certainty and criterion of knowledge one of the most significant and deeply considered in philosophy. There continues, however, in regard to it a very considerable diversity of view.

In the discussion of this subject, two special conflicting tendencies, not favorable to a scientific treatment and just understanding of it, have revealed themselves. The one is the tendency to multiply the number of primary and absolutely certain cognitions, or to reckon many cognitions as within their circle. The other is the opposite tendency to reduce the number of such cognitions, and to reckon cognitions as belonging to the sphere of uncertainty or doubtfulness. Both these tendencies have gone to the extremes of intemperate zeal. Many men from partisan spirit, and often from a genuine concern for the support of principles which, in their view or according to general consent, are of paramount importance to the interests of mankind, have sought to raise them above doubt and danger by putting them in the category of necessary and absolutely certain truths. Many, on the other hand, from the dislike of principles, or from the habit of doubting, degrade cognitions as to certainty; they doubt and deny where there is sufficient reason to believe. These opposite tendencies always operate with pow-

erful reciprocal influence. Excess of the one will effect a revolution and excess of the other. A period of extravagant inference from facts and principles and of dogmatism will beget skepticism; because extravagances will in time be discerned; but instead of stopping at a reasonable measure of doubt, many go on beyond reason to doubt of what are real facts and certainties. In detecting unwarranted assumptions made from facts, they are apt to doubt the facts themselves. Accordingly, men who believe too readily and too much always encounter men who believe too hesitatingly and too little. Over-confident dogmatists invariably arouse over-bold skeptics. The attempt to draw too much out of facts always defeats itself, and works damage to the interests in behalf of which it was made. And of some principles it may be truly said, that to induce men to believe more is not to ask them to believe so much.

But, on the other hand, extreme skepticism works its own dissolution. Sooner or later it starts a reaction. Men sicken of doubt. It creates a sense of vacancy, and a hungering, a longing, for positive principles and leaders; and under the influence of this feeling men sometimes too readily surrender themselves to the guidance of those who, though incapable and erratic, are positive and confident. Skepticism begets superstition.

By certainty in this discussion is meant especially a mode or state of mind, subjective certainty. The question of certainty has been generally considered as pertinent to all our knowledge, to both our immediate and mediate knowledge. But it is more frequently and fully treated as pertaining to our mediate

knowledge — to our knowledge of the external and of the past and future.

It is important to observe at once that there is a difference of kind and of rank between the certainty of immediate knowledge and the certainty of mediate, owing to the difference of the relations in the two cases between the act of knowing and the thing known. The certainty of immediate knowledge, the knowledge of the present modes of mind, is that of insight or direct hold. The certainty of mediate knowledge contains a peculiar emotional element, a conviction, a feeling of trust or assurance, regarding a distant object. Again, the certainty of immediate knowledge is the highest order, it is perfect. Between the knowing and the thing known there is no gulf of time or space. The two terms have no break or severance between them, nothing to render their connection uncertain. The thought knowing and the thing known are inseparable. The consciousness of a mode of mind is not distinct from the mode itself; there is no real duality. This intimacy of connection and identity make the certainty of immediate knowledge absolute. The certainty of mediate knowledge is of a lower rank than that of immediate. In the latter, as was just said, there is no interval between the act knowing and the thing known, no intervening room for doubt to lurk in, so to speak, and the certainty is perfect. In mediate or representative knowledge, however, there is an interval of time or space or both. This interval reduces the certainty as to the existence of the thing known below absolute.

There are two terms and things which have generally appeared prominently in the discussion of certainty, and which it will be well briefly to consider at

this point, viz.: Truth and Belief. Truth differs from knowledge, in that simple knowledge is concerned especially with the reality of the thing known, but truth especially with the fact, and the exactness, of the conformity between the act or mode of knowledge and the thing known. According to an old and widely received definition, truth is "the conformity or agreement of thought with its object." This definition is designed to apply to all knowledge, but seems to be specially applicable to mediate or representative knowledge. For conformity or agreement requires two things, thought and a something distinct and external or absent to which thought conforms. But in immediate knowledge there is not real duality; and the truth of immediate knowledge can not therefore be the conformity of two distinct things. The conformity here, if conformity it may be called, is peculiar; it is the conformity of a thing with itself, of a thought with the consciousness of it, or of things that are one and inseparable. It may indeed be said that thought, the conscious mode, is the self-expression, the self-revelation, of mind, and has on that account a conformity with the mind. But the conformity is only of an attribute with its subject. There is no real duality; the attribute does not and can not exist, and can not be known, apart from its subject. It is important thus to discriminate between the truth of immediate and mediate knowledge; between the identity and inseparability of thought and thing thought of in the former knowledge, and the plurality and conformity in the latter.

A division has been made of truth into formal or logical, and real or material truth. Formal truth is the agreement or consistency of different thoughts, or

of parts of the same thought. It is harmony among our subjective thoughts themselves. Real truth is the conformity of thought with realities, especially extra-mental realities. "Formal truth," says Sir W. Hamilton, "will therefore be of two kinds,—Logical and Mathematical. Logical truth is the harmony or agreement of our thoughts with themselves as thoughts. . . . Logical truth is supposed in supposing the possibility of thought; for all thought presents a combination, the elements of which are repugnant or congruent, but which can not be repugnant and congruent at the same time. . . . Were the Laws of Logic purely subjective, that is, were they true only for our thought alone, and without any objective validity, all human sciences (and Mathematics among the rest) would be purely subjective likewise." ¹

A clear discussion of certainty is hardly possible without giving at least brief attention to the nature of Belief. By some, belief is made coëxtensive with all knowledge, immediate and mediate, presentative and representative. The consciousness of a mode of mind is called a belief, as well as the knowledge of an external thing or a past event. But properly considered, belief includes only representative knowledge. It pertains to the past, the future, and the extra-mental. Our knowledge of the past and our expect-

(1) *Logic*, pp. 379, 380.

A species of formal truth is thus described by another writer: "Debarred as we are from everything beyond the relative, truth, raised to its highest form, can be for us nothing more than perfect agreement, throughout the whole range of our experience, between those representations of things which we distinguish as ideal and those representations of things which we distinguish as real." (Spencer, *First Principles*, p. 139.)

tation of the future are by all admitted to be beliefs; but if they are beliefs, the consciousness of a present mode of mind ought not to be classed as a belief. The great differences between these knowledges forbids such classification. In short, belief ought not to be made to include presentative or immediate knowledge.

Every belief consists of two elements: the one is a notion or image; the other is an emotion—the emotion of confidence, assurance, trust, or conviction. In belief, we must believe something. A notion or image of the thing believed then forms a necessary constituent of the belief; it may be called the framework. To the notion, the feeling of trust or conviction attaches itself; and together they constitute belief. The notion and the feeling in belief are equally original; neither creates the other. The feeling does not arise by spontaneous generation from the mere frequency of the occurrence of the notion. The feeling, as to origination, is as independent of the notion as the notion is of the feeling. But they differ in the order of development. The notion precedes the feeling; and is the condition of the rise, or the excitant of, the feeling. Often the feeling responds immediately to the notion, and the most powerful beliefs are among our earliest experiences. Our belief in memories is complete, or almost complete, from the very first. Conviction weakly attaches itself at the first to perceptions; but on little repetition, and at a very early age, the belief in external realities becomes as strong, or almost as strong, as it ever becomes.

Our representative knowledge,—external perception, memory,—we generally denominate belief, when

we have special reference to, or are emphasizing the strength of, our feeling of assurance in the fidelity of the representative notion. It may be remarked that there is as to belief an important difference between perception or memory, on the one hand, and imagination, on the other. In both modes there is a notion, picture, idea; but in perception there is associated with the idea a conviction of an external reality to which the idea answers; in imagination there is an idea without such a conviction.

Some eminent psychologists hold that there is a third constituent in belief, beside idea and emotion, namely, willing. For instance, Professor Bain says: "It will be readily admitted that the state of mind called Belief is, in many cases, a concomitant of our activity. But I mean to go farther than this, and to affirm that belief has no meaning, except in reference to our actions; the essence or import of it is such as to place it under the region of the will. We shall see that an intellectual notion, or conception, is likewise indispensable to the act of believing, but no mere conception that does not directly or indirectly implicate our voluntary exertions, can ever amount to the state in question."¹ And Sully: Belief is "a compound of three factors, intellectual representation, feeling, and active impulse."² We must admit the evident facts much emphasized by these writers, that belief is generally closely associated with action, with nascent tendencies to action and involuntary action; that belief involves readiness for action; that belief is so much a condition of voluntary action that we never resolve upon a deed unless we have faith in its possi-

(1) *Emotions and Will*, p. 524. (2) *Human Mind*, I., p. 485.

bility, or attempt to acquire or affect an object without faith in its reality. But we must also carefully attend to facts which they seem to disregard. There is certainly a significant difference between promptings to action (which accompany all emotions) and willed action, or, in general, between involuntary and voluntary action; between readiness for action and resolution to act; between emotion and proper willing.

Belief can be put under willing or made a phase of willing, or willing can be made an essential factor of belief, only by an erroneous definition of either willing or belief. If willing be defined as including all emotions, then it would follow that belief is a mode of willing, because its most distinctive characteristic is a particular emotion. But such definition confounds two specifically different modes of mind. Though emotion and volition are very closely associated, though there is never volition without urgent emotion, nevertheless, the difference between emotion and volition proper, as that between the assurance of the reality of an object and the determination to act on the object, must be regarded as one of the most real and important differences in human experience. Belief should be defined as a phenomenon of mind compounded essentially of representation and emotion, and coming in between imagination and volition. It is beyond imagination, by including the special feeling of trust or confidence in the reality of the object imaged. It comes short of volition, because volition is a distinct resolution, decree, fiat (much more than a mere prompting or impulse), to acquire or act upon the object of whose reality we are confident.

Finally, in the interest of clearness, it is worth while to notice the difference between belief or conviction and necessity. Necessity of thought and strong belief or disbelief are by some confounded. The unbelievable is identified with the unthinkable or unpicturable, or the latter with the former. I can not think anything as existing and not existing at the same time, or of contradictory attributes of the same subject. I am necessitated to think of two straight lines as not inclosing a space. I can not think of space as having an end. These necessities of our thinking can not with propriety be called beliefs; but are rather direct, perfectly defined, protrusive knowledges. The disbelief in antipodes was once very strong. The belief in the external world of matter is, and always has been, with most men, stronger. But the disbelief was not a necessity of thought; for the thought of antipodes was always possible. And the very strong belief in the external world is not, as some regard it, properly a necessity of thought; at least many of the philosophic have declared indirectly and directly that it is not a necessity for them. They have variously held that our notion of matter has no likeness to any objective reality; that all there is of matter is the subjective notion of it; that matter is a mode or portion of mind. In necessary thought, the force, so to speak, belongs rather to the notion concerned. The necessity that is in our inability to think the negation of a notion, results from the power of the positive notion to exclude its negative. In belief, the force belongs not so much to the notion concerned, as to the emotion of conviction accompanying the notion. This qualitative difference between belief and necessity some have, however, denied, by

holding that the only difference is one of degree in the intensity of the association of ideas. Necessity is a stronger association of ideas or elements of ideas than belief. This doctrine appears to be defective and erroneous.

The consideration we have now given to the character of truth, belief, and necessity, prepares the way for the further and clearer treatment of the main points of our present discussion, viz.: the real nature and criterion of certainty; and to them let us now proceed.

1. Certainty of Immediate Knowledge.

As already remarked, the certainty of immediate knowledge, the knowledge of the mind and its phenomena, is of a peculiar character and has the highest rank. It is the certainty of insight, intuition, immediate possession, where yet there is not real plurality, but only identity. The phenomena of mind are in the center, the focus, of knowledge, consciousness. Between them and the knowledge or consciousness of them, there is no interval of time, space, or existence. The knowing and known are not two, are in no wise severed, but are the same. The insight is not looking into something which is very near or present to us, but yet is a reality distinct from the mind; the seeing and the thing seen, the possessing and the thing possessed, are one and indivisible.

In immediate knowledge, knowledge and certainty are really the same. Knowing and the thing known being the same, knowing and certainty are the same. Certainty here is not something added to the knowledge or presentation; it is not an emotional conviction or assurance, or an experience of that kind, which associates itself with the knowledge and renders it

certain. The certainty of immediate knowledge is just the knowledge itself; it is just the immediate sight of, the immediate hold on, the object. We are certain of what we have immediate possession of, because the possession is immediate. Certainty is in, it is identical with, the knowledge. Further, the certainty is of the highest order; it is absolute. There is no place for, there is no possibility of, doubt here. Every degree of doubt or uncertainty is quite shut out, by the closeness of the relation, or the identity, of the knowledge and its object.

Real mind is known immediately in its modes. Succession and memory are not absolutely necessary for the knowledge of real mind; or all our knowledge of mind is not by or of them alone. They are necessary for the knowledge of personal identity or the permanency of the mind; but the reality and unity of the mind may be and are known directly in its diverse simultaneous affections. The certainty of our knowledge of mind is not endangered or reduced by even an interval of time.

In immediate knowledge we are cognizant and certain not only of the simplest relations of the facts and phenomena of mind, but also of their complex relations; of logical deductions from premises, of mathematical axioms and demonstrations by them. We immediately know and are perfectly certain that, if all men are mortal, Socrates is mortal; that if equals be added to equals, the sums will be equal; that two straight lines can not inclose a space; that the angles of every triangle are equal to two right angles. We are immediately cognizant and absolutely certain of these as ideal facts and relations. Whether there is, according to the common conception, a space exter-

nal to and independent of the mind, containing objects of equal and unequal durations and magnitudes, and affording the possibility of geometrical lines, figures and their relations, corresponding to the subjective or ideal, is a farther question, and one that is answered by philosophic schools very differently as respects knowledge and certainty. By the idealists it is answered emphatically in the negative; by the realists, emphatically in the affirmative. We must admit that there is a difference between the knowledge and certainty of the relations of ideas to one another, and those of the relations of ideas to realities external to mind. This is a fact that is too often disregarded. The following remarks of Sir W. Hamilton, as to the difference in certainty between the formal sciences, logic and mathematics, and the real, are pertinent: "The formal sciences have a superior certainty to the real; for they are simply ideal combinations, and they construct their objects without inquiring about their objective reality." "Logic might be true, although we possessed no truth beyond its fundamental laws; although we knew nothing of any real existence beyond the formal hypothesis of its possibility." "If matter had no existence, nay, if space and time existed only in our minds, mathematics would still be true; but this truth would be of a purely formal and ideal character,—would furnish us with no knowledge of objective realities." ¹

Some tests or criteria of the truth and certainty of knowledge, which have been earnestly maintained by many epistemologists, are applied to immediate knowledge. Of these are Self-Evidence and Neces-

(1) *Logic*, pp. 379, 380.

sity. It is said that a proposition that is self-evident bears the mark of the highest truthfulness; that our certainty of such a proposition is of the first order. But this criterion contributes no help, explicates nothing, as to the certainty of immediate knowledge. The object of immediate knowledge is indeed self-evident; but it is self-evident because it is immediate to our thought. To say that the object is self-evident, does not say or explain anything more than to say that it is immediate. The primary criterion or standard of knowledge is rather therefore simply Immediacy. What is in immediate relation to our thought is most certainly known. Knowledge that directly grasps its object, that is one with and inseparable from its object, is the most certain. The near relation of object to thought and of thought to object makes the object self-evident and the knowledge perfect in certainty. Immediacy is self-evidence and certainty.

Necessity has been deemed by some as the supreme criterion of knowledge. Of necessity there are two modes, which may be discriminated as positive and negative. Positive necessity is the determination with which we think some things as we think them. Negative necessity is the necessity that is upon us in our inability to think the contrary of some things. Sir W. Hamilton says of this criterion: " Truth is the correspondence or agreement of a cognition with its object; its Criterion is the necessity determined by the laws which govern our faculties of knowledge; and Certainty is the consciousness of this necessity. Certainty, or the conscious necessity of knowledge, absolutely excludes the admission of any opposite supposition. Where such appears

admissible, doubt and uncertainty arise." ¹ The fact of the impossibility of thinking or conceiving the opposite, is, under the name of the "universal postulate," vigorously advocated by Mr. H. Spencer as the supreme test of knowledge and propositions. He says: "The inconceivableness of its negation is that which shows a cognition to possess the highest rank — is the criterion by which its unsurpassable validity is known." "A proposition of which the negation is inconceivable, must inevitably be accepted; and that such a proposition is true, is the Universal Postulate." ²

The criterion of Necessity, as applied to immediate knowledge, we may treat much in the same manner as that in which we have treated self-evidence. Negative necessity has its ground in positive necessity; that is, our inability to conceive the opposite of a cognition is caused by the force of the cognition itself. The cognition has such possession of the mind that the supposition of the opposite can gain no entrance, no hold. It is indeed impossible to think of the opposite; but then, generally, we do not want, we do not try, to do so, because we are controlled by the positive cognition. Further, the necessity of a knowledge depends entirely on the fact that it is immediate. It is the immediacy of the relation between knowledge and its object that makes the necessity. The immediacy is itself the necessity, the only necessity. To say that a cognition is necessary adds nothing to the assertion that it is immediate. We may then maintain again that immediacy is the supreme criterion of knowledge. Knowledge

(1) *Logic*, p. 377.

(2) *Psychology*, II., p. 407 and p. 490.

in which the knowing and the thing known are one and indivisible, or in which the knowing is an inseparable attribute of the thing known, is our most certain knowledge. The immediacy is the necessity and the certainty.

2. Certainty of Mediate Knowledge

The truth and certainty of mediate knowledge differ from those of immediate, because, as was before observed, of the difference in the two cases as to the nearness of the relation between thought and object. If the truth of knowledge is its conformity with the object, then the truth of immediate knowledge is special, because the conformity between knowing and object is special. There is not duality; there are not two distinct things one of which agrees with the other. The conformity is of a thought with itself, of a thought with the consciousness of it, or of an attribute with its subject. The truth of mediate knowledge is of a different kind, because the conformity between the thought and the object is different. In this case there is duality; the conformity is between distinct things, between knowing and a past fact or an external object known; the knowing is a representation of an absent object.

The certainty of mediate cognition is of a special kind. All mediate knowledges, memories, perceptions, are modes of belief, and their certainty is the certainty of belief. It is an emotional affection that grows to the thought or representation of the object,—a conviction, a feeling of trust, confidence, assurance. We feel convinced that our representations of objects are true. And the certainty of mediate knowledge is of an order inferior to the certainty of immediate. The criterion or standard here also is,

as to rank of certainty, that of immediacy. The certainty of immediate knowledge is in the nearness, the intimacy, of knowledge and object, and is absolute. The certainty of mediate knowledge, though indeed very high, is yet below absolute, because of the duality and separation, the less intimacy, between knowledge and object.

There are different grades of certainty within mediate knowledge; as in memory and perception, and in perceptions according to the degree objects are remote or hidden from the mind. The standard is immediacy. Our certainty of memory is greater than that of external perception, because the relation of knowledge and object in the former is closer than in the latter. The knowledge that is nearer immediate, is the more certain.

The certainty of a past mode of mind is not absolute, like that of the present representative mode; but it is the highest species of certainty regarding things external to consciousness. It is higher than that of the knowledge of extra-mental objects. This difference of grade manifests itself in the fact that memory, taken in general, is not doubted, but external perception often is. In other words, men have never questioned that there was a past: they have frequently questioned that there exists anything external to or distinct from the mind.

The ground of this difference in the grade of certitude is, as was just said, in the difference of the two knowledges as to nearness or intimacy of relation between the knowing and the thing known. In both memory and perception, the representing act and the thing represented are separated by an interval; in the one case, by an interval of time, in the other by an

interval of space. But in memory, though the representing and the thing represented are separated by an interval of time, they are yet modes of the same entity, the soul. The past event remembered and the remembering act are connected by the permanent subject of which both are modes. In perception, there is a difference of space and of entities between the representing or knowing and the object known. The severance is more thoroughgoing in perception, or perception is not as near strict immediate knowledge as memory, and its certainty is therefore less. We may hold that the experienced difference in certainty between memory and external perception, is but the expression of the real difference between the two cases as to the intimacy of the act knowing and the thing known.

Let us proceed to consider more specially and fully the certainty of our knowledge of external realities. The knowledge of the external is, like memory, a belief, because the knowledge is of what is outside consciousness. The perceptive belief is a composite mode of mind, consisting of an idea or representation and a conviction of its truthfulness. The certainty of external knowledge is of a very high degree; but it is still less than that of memory, and especially less than that of present mental phenomena. I have already referred more than once to the effort of some psychologists to bring matter within the sphere of consciousness with the purpose, mainly, of bringing it within the range of absolute certainty. This effort, however well meant, is unjustifiable. Matter is outside the brilliant realm of consciousness and severed from the mind, and is therefore outside the realm of absolute certainty.

Various criteria have been advocated for the truth of the knowledge of extra-mental things. Among these are Force of Belief, and Necessity. Mr. H. Spencer holds that the knowledge will stand the test of the "universal postulate." Force of belief or conviction has been accepted by many as in itself the highest proof or certainty of our knowledge of external things. Reid affords a conspicuous example. Sir W. Hamilton rests on this criterion in the following: "If asked how I know, or am assured, that what I apprehend as a mode of mind, may not be, in reality, a mode of matter, or that what I apprehend as a mode of matter may not, in reality, be a mode of mind, I can only say, using the simplest language, 'I know it to be true, because I *feel* and *can not but* feel,' or 'because I *believe* and *can not but* believe, it so to be. . . . It thus appears, that when pushed to our last refuge, we must retire either upon Feeling, or upon Belief, or upon both indifferently."¹

The great, I may almost say the invincible, force of our belief in external things, no one can deny. Men act in obedience to it without the least hesitation. They live and die by it. Force of belief is indeed our test of certainty, or it is certainty. But we must yet grant it is not a perfect certainty; as is shown by the many instances of beliefs that were most powerful, and yet were entirely delusive. Many have the strongest conviction of the objectivity of sounds and colors; but in this instance conviction is not certainly true, but certainly false. And the idealistic philosophy is but the belief of many that what seem to be external objects and their relations, are really sub-

(1) Edition of *Reid's Works*, p. 760.

jective ideas and their relations; that space and all its contents, all its mathematical quantities, forms, relations, possibilities, are but subjective facts and phenomena, having nothing outside the mind corresponding to them.

Force of belief or conviction may be said to be a test of certainty; but it is evidently a defective one, it may delude. Force of belief can not be taken by itself alone. To be a safe test, it must be supplemented or aided. Beliefs in external things are real certainties, or reach the highest degree of genuine certainty possible to us of the external, when the conviction or feeling which enters into the beliefs is regulated, or regulates itself, by the perception of the possibility that the ideas or representations which enter into the beliefs are true to the supposed externals. Force of belief is real certainty when it depends upon, is determined by, our seeing the possibility of conformity between our ideas or representations and the external things represented. Only belief or conviction so based and determined, or so sustained, can successfully withstand the insinuations and assaults of idealism.

This reasoning, true of material objects, is true also of objective space. Not the great force of conviction accompanying our notion of objective space taken alone, constitutes the certainty of our knowledge of space; but this force of conviction when seen to be confirmed or warranted by the known nature and action of the senses and the intellectual power by which the notion of objective space is formed. We become truly assured against the hypothesis that space is merely a form of internal thought, by considering the possibility, in our faculties, of acquiring

a notion corresponding to the supposed nature of objective space. Our conviction thus confirmed is not blind, but enlightened. We may further say likewise concerning the knowledge of the objective existence of the Deity, that it is not truly and wholly certified by forceful emotion attending our notion of him; but by emotion that has the support of the cognizable means of our forming a true notion of him as objective.

The defect of the teaching of Reid and of those who, like him, rest the certainty of external existences on the invincibility of our beliefs, can here be made clear. They ground certainty on the force of the beliefs; whereas they should ground it on the force of the beliefs as this is qualified by our cognition of the capability, which lies in the nature, processes, and coöperation of our senses and faculties, of acquiring the notions of external things that are the frameworks of our beliefs,—of the possibility of forming notions or images true to, or in conformity with, what we suppose to be the real nature of external things. And only in showing this possibility do we show a basis for certainty that can hold its ground against the questionings and attacks of skepticism and monism.¹

Some have supposed that the criterion of Necessity can be applied to our percepts of external things; that in our acts of perception we are under the positive compulsion to think of such things as existing, that we are incapable of thinking the contrary. Having reference to the impossibility of thinking

(1) Dr. Mansel well remarks with reference to Reid: "To refer any belief to a principle of our nature, is insufficient, unless we can at the same time psychologically account for the origin of the notions which that belief implies." (*Proleg. Logica*, p. 126.)

the opposite, or the "universal postulate," Mr. H. Spencer says: "The current belief in objects as external independent entities has a higher guarantee than any other belief whatever." But if this doctrine were true, there could hardly be such numerous schools of idealists and monists; who hold, often with the self-assurance of men that think they only are entitled to speak on knowledge, the quite contrary view. Professor Bain remarks with some force in reference to the statement just quoted from Mr. Spencer: "There is an evident incongruity in laying down, as a universal postulate, what begs the very point in dispute in a leading controversy" (*Logic*, p. 668), that is, the controversy between the Berkeleians and dualists.

In our cognition of matter, we have indeed necessary knowledge and perfect certitude of the subjective percepts. Our knowledge of them is immediate, and therefore necessary and absolutely certain. But there are not the same knowledge and certainty of the external independent realities represented by the percepts. The interval, the spatial and existential severance, between percept and external reality, makes a difference of knowledge and certainty; gives room for the possibility of doubt, for suspicion of the non-existence of the apparent external reality. For this reason we must admit there is truth in the declaration of Sir W. Hamilton: "It is impossible to imagine any presentation of the non-ego by any finite intelligence, to which a doubt might not be raised, whether these presentations were not merely subjective modifications of the conscious ego."¹

Yet, if our knowledge of the external is not imme-

(1) *Logic*, p. 381.

diately and necessarily, it is real, it is true representation; if the certainty is not perfect or absolute, it is still of a high rank. The certainty is a feeling, an emotional conviction or assurance, which unites itself with the notions or representations, and gains such dominance over the mind that men act from it in the most important interests without any hesitation whatever; as if their certainty of the external objects were as perfect as is that of the internal representations. Doubt of the external is possible; but with many, we may say the great majority of mankind, it never becomes actual; never a suspicion arises that external object may not exist, and that there may be nothing but the subjective idea or percept.

But it should be further observed that the association of feeling or conviction with representation in external perception is not what may be called an arbitrary one; there is, we may say, a certain fitness in the association. Conviction becomes attached to representation because of the constitutional capability of the mind to make true representations of external things. It may be held that, if the mind had not the faculties of producing true representations or pictures of permanent and extended external realities, we would never have the conviction of the existence of such realities. By the structure of the mind, this conviction goes with representations that have, to a degree at least, real likeness to external objects. With respect to the justifiable claim of the idealists, that we are unquestionably sometimes deluded by our convictions of externality, it should be answered: that our convictions have a higher grade of certainty when we ourselves see the capability in our faculties of forming true representations or images of external

things. Conviction of the external rises on the basis of this capability; but becomes a higher, a more genuine, certainty when it is supported or confirmed by our own apprehension of the capability,—by our seeing in the senses and intellect the possibility of forming true pictures of extended external realities. In conviction so confirmed, we have a high certainty that supposed outside permanent and extended entities are not really inside, and that idealists are unreasonably suspicious and unbelieving.

Mr. H. Spencer attempts to hold the extreme position, that we have the highest order of certainty of "independent external entities," a certainty as high as that of the subjective percepts, though we "can not know" these entities, though our percepts are "wholly unlike," can not "resemble or be in any way akin to," them.¹ But the attempt is unreasonable. Our certainty of a subjective idea or percept, of which we are in the clearest manner conscious, must surely be greater than or superior to our certainty of an external thing, as a piece of matter, a book, or a table-fork, which we "can not know," to which the subjective percept can have no likeness "either in kind or degree."

There is a significant inconsistency in Mr. Spencer's theory of external perception which should be noticed here. If in perception our thought is as much the creation of external material things as he holds; if internal relations are produced by external relations; if the "forms of thought" are established nervous structures and processes, or are made by or made through these; then there must be some like-

(1) *Psychology*, II., p. 494.

ness between product and producer, between internal percept and external object,—much more than he is at all willing to admit. If, on the other hand, percepts are so very much unlike material objects as he holds, then they can not be nearly as dependent upon the objects as he supposes, and our certainty of the latter must be of a low grade indeed. The true doctrine seems to be, that our percepts, though dependent upon external objects, are both far less dependent upon and far more like the objects than Mr. Spencer conceives; and that our certainty of the objects, though not of the highest kind and degree, like that of the subjective percepts, is yet of a high order.

We have been having in mind hitherto material objects chiefly. The same conclusions are true of external space. Our subjective thought of space, and of geometrical quantities or forms and relations, is necessary and perfectly certain; but we can not hold the same as to our certainty of the existence of external space and external geometry. Kant and his idealistic followers regard the thought of space as a marked instance of necessity; but consider space as only a form of subjective thought, having no corresponding objective reality. There is great inconsistency in the course of those who hold, on the ground of the necessity of our thought, to real objective space, and yet endeavor to maintain that our notion of space is not original, but derived from our notion of time or the non-spatial, and that the notion has no likeness whatever to external space. When it is said that the necessity of our thought of space proves or insures the existence of objective space, but of objective space to which our necessary notion has no real correspondence or resemblance, we may answer: the

assumption can be shown to have no solid ground. If the necessity of the notion insures the existence of objective space, it insures the existence of objective space, in its main character, as this is represented by our notion. But if we affirm entire error, in our necessary thought, as to the form of the external thing, we can not well affirm less as to the reality.

Finally, a few remarks as to the certainty of Expectations or the Future. The certainty of future events is dependent upon the cognition of the uniformity of nature. It arises from our knowledge of the past, especially of the uniformity of the past. In regard to future events, as in regard to extra-mental realities, too much importance has been given, in the discussion of certainty, to the mere force of conviction; and too little to the formation of the notions of events which, in association with the feeling of conviction, make our expectations, and to the possibility of the conformity of these notions to expected events. This has been in some instances true of the most important expectations, namely, those of religion. As we form our notions of future events out of our notions or knowledge of past events, the real certainty of a future event is, at last, proportionate to the known and possible agreement or harmony of that event with past events. The greater the unlikeness or repugnance between our notion of a future event and our knowledge of the past, the less the certainty.

66198

Philos Walter, Johnston Estep
W232 The principles of knowledge.
v.2.

DATE

NAME OF BORROWER

**University of Toronto
Library**

**DO NOT
REMOVE
THE
CARD
FROM
THIS
POCKET**

Acme Library Card Pocket
LOWE-MARTIN CO. LIMITED